Better Crops

The Pocket Book of Agriculture

December 1923

In this issue—Dean Williams—Dr. Frank Crane—C. A. Bacon — Jeff McDermid — Charles J. Brand — Harrison Fuller

Potash Millionaires

IT is a common belief with some farmers that there is enough potash in the soil on their farms to "last a million years." Is this true?

Is the average soil any richer in potash now than the average Virginia soil was two hundred years ago? Probably not.

Virginia soils have been cropped over three hundred years. The original plant food lasted many years, but today, in Virginia, it is impossible to grow a good crop of tobacco, cotton or grain without plenty of fertilizer.

Few farms in other parts of the country have grown crops over two hundred years, but already on many soils the lack of potash is standing in the way of bigger and better crops. No farmer is a potash millionaire. The supply on any farm eventually runs out.

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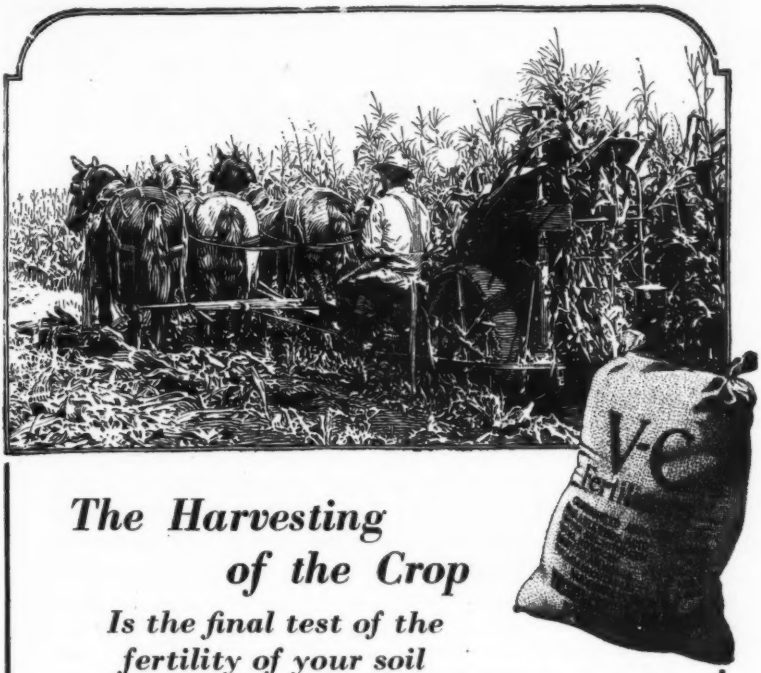

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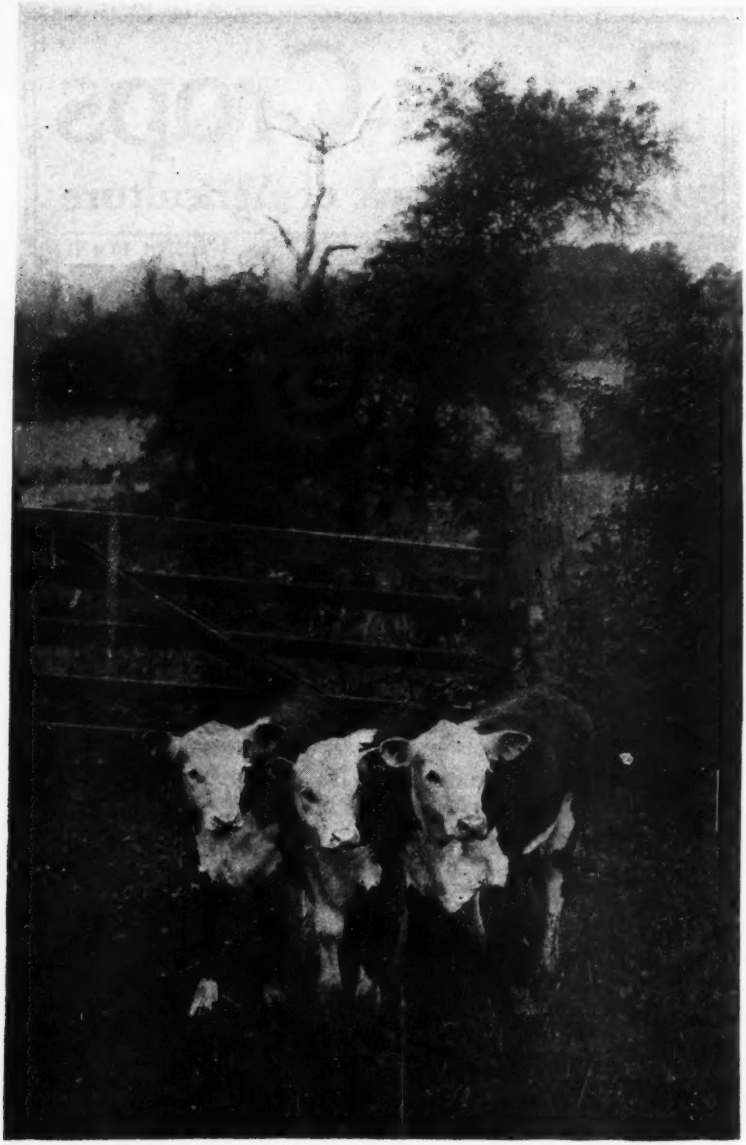
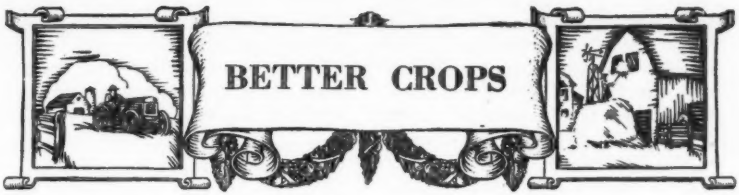


The man who sent us this attractive picture said, "All of the 'better crops' on the farm do not come from the soil" and we all agree with him!



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VOL. I NEW YORK, DECEMBER, 1923 No. 4

Money Makes MONEY—*Sometimes*

¶ *A little exhortation on the fine art of speculating, by our mentor,*

Jeff McDermid

ONE summer night in 1880 as Mark Twain sat musing over the details of an unborn story with his famous pipe hanging from the corner of his mouth, the doorbell rang.

It was Dwight Buell, the local jeweler, come to see Twain on a matter of business. Professional and scientific men are always being sought on "matter of business"—not because they know so *much* about business, but because they know so *little* about it.

BUELL was shown to the billiard room, which also served as Twain's study—caught in a tight place in unravelling the plot for a "Huckleberry Finn," it was Twain's habit to knock the balls around the table until the plot straightened itself out.

True to formula—scientific men should make a note of this—Buell wanted Twain to buy some stock in a company that was about to manufacture a type-setting machine. Twain was reluctant. Buell was persuasive. Buell became passionately argumentative—submitted estimates showing that the American business alone would earn thirty-five millions of dollars per year,

while the European business would surely bring in twenty millions more. These tantilizing figures dazzled Twain, who knew little about investing. He faltered, stuttered, stammered, but finally fell—he would take a little of the stock, but only a little, mind you.

Buell signed him up for $2,000 worth of the stock—when we go shooting for elephant and find no spoors we are wise to grab off an occasional rabbit. "Never overlook anything," is the motto of the energetic and successful stock salesman.

ONCE in on the ground floor, Twain professed a desire to see this machine. He knew all about setting type by hand from personal experience, and even at the time he put his name on the dotted line, subscribing for the stock, he held the settled and solidified opinion that a successful type-setting machine could not be made. "A machine cannot be made to *think*," he said, "and the thing that sets movable type *must* think or retire defeated."

So the performance he saw at the Colts Arms factory, where the model was being built, thoroughly amazed him—here was a machine that could do everything that a human being could do, except drink, smoke, chew, swear and go on strike. He might have omitted the latter—but more of that later in our story.

The machine, invented by James W. Paige, was the first to set movable types automatically—the monotype had not been invented, the linotype was still in embryo in Mergenthaler's brain—all type was set by hand, slowly, carefully, expensively. The world was waiting to pour its gold into the lap of the man who would come forth with such a device—hungry presses were waiting to devour the forms.

Who blames Twain for becoming enthusiastic about his chances for getting rich? He was a professional man, knew little about ordinary business and nothing about investments. He wrote to his sister, "How strange it will be to have unlimited means, to be able to do whatever you want to do, to give whatever you want to give, without counting the cost!"

ISN'T that the dream of every scientific or professional man? He must do something with his surplus. He cannot invest it in his business, as can a manufacturer—for the professional man's business is in his head. With a home paid for, furnished, and enough laid by for the rainy day—the surplus must go to somebody else for investment.

The type-setting machine began to absorb money. It was put together and taken down, again and again. Twain invested thirty thousand more to make his first two thousand safe. But still the rat-hole was calling for more, more money. Paige, the inventor, called on his stockholders for another assessment—got it, invested it in new parts, and still the machine did not work properly. How careless we are of other people's money, and Paige was no exception to the rule.

With Twain down to almost his last nickel, home mortgaged, want and the wolf growling in the distance, Paige announced his latest joker—the machine would not space the type properly—it must be designed all over again! It was an undertaking for a millionaire. Twain begged to be counted out.

ONCE more the man who had tickled the world until it laughed a fortune into his vest pocket was broke—all had gone into the invention. The millions he was to make were vanished. Cold, biting breezes wrapped themselves lovingly around the nape of his neck. To work he must go again, and remake his fortune. Once again his pen was cleaned, papers arranged and the professional man was on the job. He wrote to a friend, "I have been an author for twenty years and an ass for fifty!" (*turn to page 70*)

A Wool Market *that* Pays

By E. P. Walls
County Agent, Talbot County, Maryland

BACK in 1921, as a good many people remember, wool was not worth very much. Some of it sold as low as 15c per pound, while the average price throughout the year was 25c per pound. How this price was increased to 55 cents per pound, net, will no doubt be interesting and some county agents who have not tried out this plan may be able to make use of it.

Late in the fall of 1920 the Extension Service of the University of Maryland made arrangements with a woolen mill in North Carolina to receive shipments of wool from counties in the State, the wool being assembled by the county agent or through his office, and shipped as a county pool, he furnishing a summary of the number and patterns of the blankets to be made.

The amount of wool required to make a large double blanket 72 by 84 inches is ten pounds, and to make an automobile robe 60 by 72 inches, eight pounds. A day on which the wool would be received was advertised and farmers made acquainted with the whole plan through the local press. For each blanket the wool grower wished made up, he was required to deposit at the time the wool was brought in $5.00 to cover cost of manufacture and 75 cents for carrying charges to and from the mill. For each robe he must deposit $4.00 for manufacture and 75 cents for carrying charges. Thus, if a farmer had 100 pounds of wool or enough to make ten blankets, he would deposit $57.50. This was deposited in a local bank and the grease wool shipped to the mill by freight, prepaid with a part of the 75 cents per blanket or robe deposited. When the blankets were made up, they were shipped back by express, collect, the cost of manufacture and transportation being paid to the express company on arrival of goods. The farmers were then notified to come in for their blankets.

The idea of the blanket plan was primarily to give an opportunity to those farmers having wool on hand, to supply themselves with some blankets of excellent quality and perchance sell a few surplus ones to their neighbors who might want them.

THE shipment in 1920 was small, some growers being skeptical about how it might work out and dubious about the disposal of their surplus. But when the first shipment returned from the mill, all doubts quickly disappeared. The blankets were of excellent quality and appearance and the demand for them at $11.25 each was so (*turn to page 65*)

Dean C. B. Williams, Chief of the Division of Agronomy, North Carolina Experiment Station, in this second article tells

how to increase the EFFICIENCY of *Southern FARMS*

NO one who has studied the actual conditions existing on many of the farms of the South can doubt but what there is much room for increasing the efficiency of the operations. According to the last census, the average value of all crops per farm in the South Atlantic States, even during this war period, was only $1,798, which leaves a pretty small margin after deducting expenses of production. Now the problem is, what can be done by the Southern farmer to increase the net returns from his farming operation so as to afford a better living for his family.

The following are some of the things, it seems to me, he can do: First, by a better organization of his cropping system so that suitable legumes will find a place in the rotations more frequently than now for hay and for soil-improving purposes. It is not possible, generally, to add materially to the producing power of his soils in the most economical and permanent way unless legumes are grown more largely than at present, and after growth are utilized more generally for the building up of the organic matter and nitrogen supply of his soils. These two prime needs of Southern soils and the one most economical way to store the soils with these is by the growth of leguminous crops as far as practical and having some of them go back into the soil.

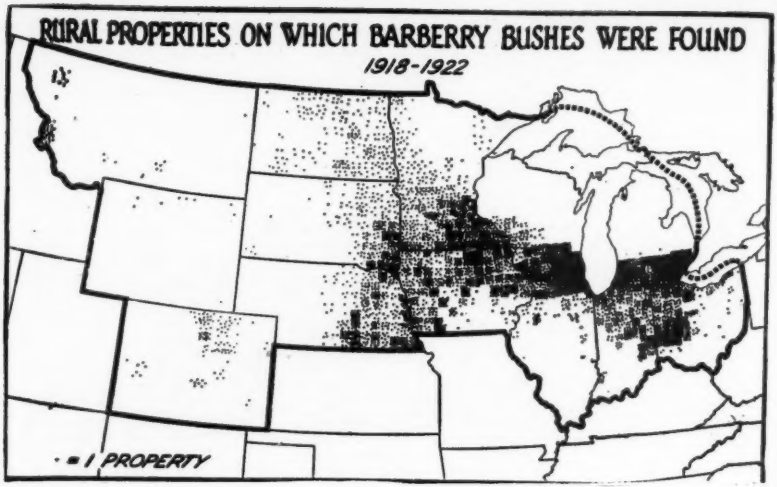
Second, by the use of well-planned rotations of crops. In arranging such rotations, crops should be used that are suitable for growth on the particular farm and which may be depended upon as major money crops. Of course, as indicated above, legumes, such as cowpeas, soybeans, clovers and vetches, should be included, using the ones best suited to the soil and needs of the farm. These may be used not only for soil-improving purposes, but for feed for such live-stock as may be necessary to keep on the farm for its most profitable operation. In the arrangement of the

¶ *The main crop of the South—KING COTTON*

crop rotations one may, with care and judgment, provide for a greater income and for a better distribution of labor on the farm throughout the year.

Third, in some cases, crop yields might be materially increased by giving a little more attention to the better preparation of the soil, and to more thorough cultivation of the crops after they are up. It is not possible, ordinarily, with many of our soils, however, to prepare the land with a one-horse plow, as is too frequently done, just before planting time and have the soil in best shape for most profitable crop production. Again, generally, the cultivation may be carried on more cheaply and satisfactorily where the crop is planted on the level or a little below the level. This plan, however, is not generally advised except where the drainage conditions of the soil are good. When planted on the level, suitable cultivators may be employed, thereafter, to good advantage to keep the land well pulverized, while the crop is growing, going over the fields every 10 to 12 days, or as soon as possible after the land is in proper condition to cultivate after rains. If this plan is followed, small weeds and grass starting into growth after rains will be killed before they get much of a start and thereby conserve the moisture present in the soil for the use of the growing crops. It is a fact that frequently crops yields are limited by insufficient supply of moisture in the soil, notwithstanding the rainfall is ample for large yields.

Fourth, another matter of importance to be looked after is that of the intelligent use of fertilizers bought and of manures produced on the farm. Of course the fertilizers used should supply amply for the particular crop needs after what manures used and legumes grown and turned under have been taken into consideration. Where the latter two have gone into the soil in fairly good amounts, the nitrogen requirements in (*turn to page 66*)



Getting RID *of the* BARBERRY

By

Harrison Fuller

Conference for the Prevention of Grain Rust

OUT in the great grain-growing region from the Ohio River to the Rocky Mountains you may observe, in many places, on almost any summer day, two young men in a rickety flivver drive into a farmyard, hastily disembark, go straight to a certain hedge or clump of shrubbery, examine it with confirmatory nods, proceed to the house, speak a few words to the farmer, return to the car for a sack of salt, dump it unceremoniously on the bushes, then circle around the farm buildings, through the garden, orchard, wood lots and along fence rows in the

vicinity and finally rattle away to repeat the performance at the next place down the road.

These are barberry scouts. Some 300 of them are employed during the summer months by the United States Department of Agriculture and thirteen states to find common barberry bushes and see that they are destroyed. The common barberry is the host plant which gives a start in the spring to black stem rust of grain, a ruinous disease which annually destroys an average of some 50,000,000 bushels of cereal crops in the north central states.

By eradicating the barberry, agricultural scientists hope to reduce this tremendous loss to negligible proportions. The campaign has now been in progress for six years. In that time some six million bushes have been destroyed.

In the states in the eradication area west of the Mississippi—Iowa, Minnesota, North and South Dakota, Nebraska, Colorado, Wyoming and Montana—every city and town and every farm, except in a few counties in each state, has been visited by scouts in search of common barberries and practically every bush they have found has been removed. In the states east of the Mississippi — Wisconsin, Illinois, Michigan, Indiana and Ohio—all except a few of the largest cities and about half of the rural territory has been covered.

To date the results of the campaign have not been entirely conclusive, but they have been satisfactory. This year in the western states the weather was ideal for rust and the damage to crops was considerable. It did not, however, even distantly approach the 200,000,000 bushel loss of 1916, and this figure might easily have been reached, or surpassed, experts declare, but for the fact that barberry eradication has materially cut down the number of the original sources of rust infection.

It is agreed that there still are enough bushes overlooked in previous surveys, in sections not yet visited, and from old roots not completely destroyed, to account for all the rust that was present in the Northwest this season. In the prairie states the rust spores may be blown for many miles from the barberries on which they get their start to distant fields of grain and a single bush accordingly may be responsible for widespread damage.

In the eastern states of the eradication area, the effect of barberry eradication in reducing rust losses has been much more marked. In many localities in Ohio and Indiana rust has been traced directly to common barberry bushes in the immediate vicinity of grain fields. Observations made after the removal of these bushes revealed that subsequent crops suffered practically no damage from stem rust and in most cases no evidence whatever could be found of the disease.

An especially impressive case is reported from Rush County, Indiana. Last year a farmer named Darius Patterson suffered severely from black stem rust. In the fall a common barberry bush 100 years old was found on his place. It was removed. This season there was no rust on Mr. Patterson's grain. He is an old-timer in the vicinity and said that this was the first time his wheat had escaped damage from rust since 1882.

How 4200 WALNUT GROWERS

THE cooperative marketing association of the California Walnut Growers was organized under the Civil Code of California, which permits growers engaged in the production, packing, or marketing of horticultural products to form a non-profit cooperative association,

The Walnut Growers operate at cost and without profit except as the profits accrue directly to the grower. The Association sells all of the walnuts produced by more than 4,200 growers, who raise 82 per cent. of the walnut crop grown in California.

BEING purely a sales organization, the Association does not contract directly with the growers. There are 42 local associations, comprised of growers in the important walnut-producing sections. The federation of these locals constitutes the membership of the California Walnut Growers' Association.

The Association is now about 12 years old.

The local associations of the California Walnut Growers' Association are corporations formed either with or without capital stock, as the California law permits either method. In each case, however, the purpose of the local association is the same, namely, to provide facilities whereby the walnuts of the growers may be received, graded, packed, shipped or marketed by the local association on a cost basis and through the marketing facilities furnished by the central association.

The Board of Directors of the Association is comprised of one elected director from the membership of each local association.

Operation Methods

The Association does not operate sales offices under its own ownership and management. Sales are made to the wholesale trade through merchandise brokers. The territories of these representatives are carefully outlined by the Association's sales department and only with a definite understanding is one broker permitted to operate in the same territory as another.

¶ *The second article in this series of interesting and instructive articles.*
¶ *Next month the story of The California Almond Growers' Association will be told exclusively in* BETTER CROPS

by

Charles J. Brand
Consulting Specialist in Marketing
U. S. Department of Agriculture

Market COOPERATIVELY

Accurate records are kept showing annual sales in each representative's territory. This enables the sales department to obtain the maximum efficiency in securing distribution, and when efficiency is not secured it enables the department to locate weaknesses and under-distribution and to correct them.

Formerly the Association sold its walnuts under a plan involving a binding future contract. This method has been abandoned. A plan has been substituted whereby "memorandum orders" are accepted by the brokerage representative in the markets from the jobbers in their territory during the summer and early fall months. The broker retains possession of these memorandum orders. As they are not confirmed, no actual sales are made until later, when the opening prices for the season are named by the Association.

About six weeks before harvest time the Association, after making careful estimates of the crop both as to total amount and as to amounts of the different varieties and grades, makes allotments to each broker for the trade in his territory. These allotments are based not only upon the expected crop but upon the past performance of the broker and the estimated requirements of his territory.

The broker in his turn applies the allotment made to him to the memorandum orders which he has retained on file and makes new sales from any surplus that may remain over after his orders have been filled.

The first shipments of walnuts are usually made around October first. When they are ready to go forward, the Association announces the opening prices. The trade is allowed 72 hours in which to confirm the memorandum orders that have been placed with the brokers. When these confirmations are received by the broker, he wires them to the Association and properly executed contracts are then forwarded to each buyer. This method brings a maximum number of orders into the Association's hands at one time so that it is practical to consolidate smaller orders for carlot shipments, thus obtaining the advantage of lower freight rates and in many other ways facilitating the work of the local association and the central body in distributing the crop. (*turn to page 57*)

¶ *Last month in this space I showed you a stalk of corn ten feet high.* ¶ *Now here is some wheat that is nearly six feet tall.*

Jeff

How One County Agent MET a BIG PROBLEM

¶ *The doubting Thomases were soon convinced—practice proved the theory*

By M. F. Gaddis
County Agent, La Grange, Georgia

THIS is a little personal story of how I managed to get the "Rat-Proof, Weevil-Tight Corn Crib" movement on in Brooks County, Georgia.

Brooks County being one of the border counties of Georgia on the Florida state line, where it is warm enough most of the winter until corn weevils can work and destroy corn, coupled with the rat destruction, made it important to put a stop to the losses every year, of the corn crop that were produced in that county. To sell the idea of such a construction of a rat-proof and weevil-tight corn crib was rather a hard job.

Every county agent has a number of "Doubting Thomases" to deal with who make excellent demonstrators if they can ever be broken into the harness, and that was my predicament.

After spending nearly a year trying to get some one to follow my plans for the crib construction that would give the results that I was trying for, I had not accomplished any visible results, so I decided to try out another plan or so depending upon the individual involved.

When I selected my men, among them was a wealthy farmer who had recently bought an (*turn to page 61*)

How to Increase the Value of County Agent Work

¶, Here is a mighty good suggestion from a man who has been extraordinarily successful in getting other folks to cooperate with him

By R. R. Smith
County Agent,
Manitowac, Wis.

THE value of a county agent's work can be very much strengthened by his taking into consideration not only the farmers, but also the town and city people as well. He is a public servant and the more he can do to serve both classes individually or to get them together collectively, the more weight and value will his work have.

It is my personal opinion that every county agent, wherever possible, should endeavor to join a city civic organization in which he holds office. One of the principal reasons for this move is the fact that today we find too many differences of opinion between the city and town man. In other words, the city man, as a general rule, cites the farmer as a hayseed, and the farmer on the other hand regards the man in the city as a hold-up and a crook. One big reason for abuse of this kind, I think we will all admit, is because they are not acquainted with each other sufficiently to appreciate the troubles and trials of the other fellow. If country man and city man could be brought closer together they would appreciate each other's efforts, gain confidence in one another, which is the sound requisite in the foundation upon which all *(turn to page 68)*

Jeffisms

Never write until you have something to say, or unless you must make your living that way!

The investor's hell is paved with poor inventions.

The china egg can still *hope*, you know!

Thoughts fool the world.

Time is money, but daylight saving time is funny.

To keep what you know, learn something new.

When you get balled up, you are likely to get bawled out.

Sometimes a single nut thinks he is the whole machine.

Some men are like a broken Ingersoll—good face, but both hands useless, and the inside works worthless.

There is nothing new under the son, until he sits on mother's new bonnet.

HOWARD M. GORE
Assistant Secretary of Agriculture

From BETTER CROPS' Washington Correspondent

WHEN Howard M. Gore, farmer and live-stock raiser straight from the blue-grass section of West Virginia, was mentioned as a successor to Charles W. Pugsley, Assistant Secretary of Agriculture, who had resigned to accept the Presidency of the South Dakota agricultural college, practically every farm organization and farm leader from Maine to California jumped to his support. They recognized him as one of 'em. It was because he truly represented the farmer's interest that he was named by President Coolidge upon recommendation of Secretary Wallace.

The agricultural experience of Mr. Gore has been complex and intensive. It was back in 1778 that his mother's people settled in the blue-grass region of West Virginia. His father's family located there somewhat later, in 1842. Born on a West Virginia farm, Mr. Gore has been intimately identified with the agricultural welfare of his state and the country ever since. In fact it is pretty hard for him to be contented with an executive job. He would rather be out in the field lot with his cattle. At the present time he owns a 500-acre farm and, with his brothers, is joint owner of two other large farms in his home state.

For 20 years the new Assistant Secretary has been a producer of cattle, hogs, sheep and horses. Until beef exports from this country fell off, much of his finished stock was shipped to foreign countries, where it sold at a premium. And quite frequently his fat lambs have sold for the year's highest price on the New York market.

Before Mr. Gore left the farm he and his brothers were extensive breeders of Jersey, Hereford, and Shorthorn cattle, Berkshire hogs, and horses. Shorthorns have been raised by the family for two generations. Breeding operations on a comparatively large scale are still being conducted by his brothers.

Few men in this country have a wider acquaintance in the live-stock and agricultural world than Howard M. Gore. He has come in contact with agricultural college people, particularly extension service, and has given a great deal of time and support to the boys' and girls' club work. It is an every-day occurrence for him as Assistant Secretary to receive a letter from some youngster whom he has encouraged to take a part in club work. And these letters receive as careful attention and consideration as important government documents.

Mr. Gore has been an intensive worker in state and national farm organizations. He was a member of the Committee of Fifteen, named by the American Farm Bureau Federation, to study live-stock marketing conditions. He has served terms as President of the West Virginia Hereford Breeders' Association and the West Virginia Live Stock Association. Further than this—and it would take great space to enumerate his farm organization connections—Mr. Gore has taken a keen interest in the work of the International Live Stock Exposition and for years took part in the program.

Just before accepting the position of Assistant Secretary, Mr. Gore held a prominent position in the Packers and Stockyards Administration, charged with the duties of administering the Packers and Stockyards Act. In this work he was again thrown in contact with all phases of the live-stock industry and broadened his experience and acquaintances. One of his last pieces of work before taking up his new duties was to act as one of the arbitrators in the case involving rates for selling live-stock at four of the principal markets of the Middle West.

Better Crops' ART GALLERY *of the month*

©Inter-News

And here is another loyal worker added to the roster of those pledged to help the farmer. Gentlemen, meet Mr. Howard M. Gore, Assistant Secretary of Agriculture.

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Wilson Popenoe, plant explorer for the United States Department of Agriculture, standing directly on the equator in Ecuador. He has brought many valuable plants, including avocados and chayotes from Central and South America. These collections, says David Fairchild, Chief Plant Explorer for the Department, "represent real exploration work of a strenuous and dangerous character in countries through which no one travels easily and where poor food, almost impassable roads, and malaria are the constant companions of the explorer."

The U. S. D. A. goes into the movies! Scene from "Sir Lion of T-Bone Ranch," a recent film produced by the Department, showing James I of England and his favorite cut of beef upon which he conferred Knighthood.

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G. R. Patterson, one of the predatory animal hunters employed by the Government, and the skin of a grizzly killed by him in Arizona where it had been very destructive of [illegible]. The bear was an exceptionally large one, weighing [illegible]

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Isaac Newton was the first head of the United States Department of Agriculture, long before the department was honored by recognition as a part of the government. His granddaughter Amanda is connected with the department today and gave Mr. Russel the facts in the interesting story which begins on the next page.

ISAAC NEWTON— *the first head of the* U. S. D. A.

By F. M. *Russell*
In Charge Press Service, U. S. Department of Agriculture

IT is now some fifty years ago that Isaac Newton, friend of Lincoln and first head of the U. S. Department of Agriculture, gave his life in the interests of American agriculture. Today his granddaughter, Miss Amanda A. Newton, is rounding out her twenty-fifth year in the same Department, where, at a meagre salary, she is displaying the loyalty and sincerity of purpose evidenced by her grandfather. In fact, the Newton family has been intimately associated with the development of the Department of Agriculture since the day Lincoln persuaded its founder to come from his farm in Pennsylvania to see what he could do to foster agriculture in this country.

The writer went over to see Miss Newton in her office, located in one of the numerous buildings occupied by the Department, to secure a few details of the life of her illustrious grandfather in order that the farmers of the country might know something of the great man who was more responsible than any other for the creation of a federal department that now employs something over 20,000 people.

She was clearing her desk after completing a most difficult task in a short time. It was the modeling from wax and coloring of 17 different kinds of cheeses which were shown at the World's Dairy Congress held at Syracuse, N. Y., the week before. Besides these she had modeled enlargements of numerous bacteria found in milk and its products in order that visitors at the dairy congress might know something of their physical appearance. She was continuing the work of instructing the American people as to the intricacies of agriculture just as her grandfather was doing over 50 years ago.

You will not find the full life of the Quaker, Isaac Newton, inscribed in the annals of history, but every detail stands out most vividly in the memory of his granddaughter. Today she is spending her leisure time, brief as it is, compiling the different phases of her ancestor's life in order that his record may be preserved as an example of devotion to the cause of the American farmer. Further than this she hopes to bend her artistic talent in the production of a painting of her grandfather to be presented to the Department of

which he was the first executive.

When the writer asked Miss Newton for a few sidelights on the work and character of her grandfather, her face lighted up with a certain pride that no one could deny her. To tell of him and what he had done for agriculture was a pleasant task, though she displayed that modesty so characteristic of the Quaker.

Born on a New Jersey farm, Isaac Newton moved in his early youth to Delaware County, Pennsylvania, where he devoted his life to scientific farming. It was here that he established what later became known as the "Model Farm," because of the new practices which he put into effect. Queer enough this farm today is located within the city limits of the city of Philadelphia, forming one of the suburbs of the city proper.

"Long before Lincoln was elected President my grandfather used to send butter each week to the White House," said Miss Newton, in recalling some of the incidents of his life before he was called upon to take charge of the agricultural department. "I remember also my father telling of a fatted calf grandfather fed and sent to Washington, where it created a sensation and was later presented to the White House. Father always remembered that, because he had to break eggs in the mouth of the calf as a means of feeding it properly."

Before reciting the details of her grandfather's activities in the government, Miss Newton related the tragic circumstances surrounding his death. It was in 1866 when he was working diligently with his experimental farm in Washington, in the production of better varieties of grain. Included in these were several varieties of wheat now in general use.

One day in July of that year, when the grain had been cut, and was lying on the ground, a thunder shower suddenly appeared. Mr. Newton hastened from his office to the field, located a mile away, to instruct his men in the proper method of saving the crop. In his supreme effort under an intense heat he suffered a sunstroke. He partially recovered, but died from the effects of the injury on June 19, 1867. As we would say today, "he died with his boots on."

It was while Isaac Newton was making a reputation as a farmer out of the ordinary on his model Pennsylvania place that he won the friendship of Lincoln and frequently went to Washington at the request of the Chief Executive to consult on matters relative to agriculture. He was constantly being called upon by Congressmen for advice and direction.

Though the Department of Agriculture was not established until 1862, work along agricultural lines dates back much earlier. It was in 1839 that Congress appropriated $1,000 for the purpose of collecting and distributing seeds and the gathering of agricultural statistics in a modest way. The money was to be taken from the Patent Office funds and the work to be carried on by a Commissioner, at that time an official of the Department of State. The work of sending out seeds and collecting statistics was continued under succeeding Commissioners of Patents.

Largely through the efforts of the United States Agricultural Society, and through the leadership of such men as Isaac Newton, the necessary legislation was enacted in 1862 for the establishment of an independent Department of Agriculture and Newton, then in (*turn to page 47*)

The Root of Gambling

By Dr. Frank Crane

THE root of gambling is the desire to get something for nothing. ¶It is precisely the same thing as the root of theft, embezzlement, robbery and burglary. ¶There are millions of dollars lost every year in speculation. But it is safe to say that not a dollar is lost by anyone who is not expecting to get something for nothing. ¶The swindler and confidence man is a rogue, but he would have no success except for the fact that his victims are also rogues. The difference is that he knows that he is a rascal, while they think they are not rascals. They do not realize that every man who expects to get something for nothing is already a thief in his heart. ¶The first lesson every boy ought to be taught in school and in the family is, that he has no right to call any penny he may have honest unless he has given a penny's worth for it. ¶No dollar that ever came to man, whether by gift or luck or treasure trove, was ever a blessing and a strength to him, except the dollar that cost him commensurate effort. ¶Whoever will take for his motto in life that he will never receive something for nothing, will not only be safe from being cheated, but will also be preserved many a time from making a fool of himself. ¶Honesty is so extraordinarily simple that it is extremely difficult to understand; while fraud is so complex that it is very plausible. ¶It is a curious commentary on human nature that a man often pities himself because he has to work hard for every cent he gets, while the swindler is vastly satisfied with himself. ¶As a rule and in the long run a sort of rough justice is worked out in the world, and a man who is of service to his fellows usually gets paid for it; while as a rule, although there are many exceptions, and in the long run, although very many get tired and do not run long enough, the man who complains that he has been ill treated and is unlucky, is one who is disappointed because he did not get something for nothing. ¶You do not always get your just pay for the work you do, and some men get pay for work they did not do; it is an uneven world, but it is certain there is one satisfaction that a man has that no one can take from him, one treasure he possesses which moth cannot corrupt nor thieves break through and steal, and that is the consciousness that he has never tried to get something for nothing. And that will give him a faith in human nature that the other kind of man can never have. ¶A certain Frenchman said that the honest man has at least one advantage over the rascal, he knows there is at least one honest man.

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BEWARE of Water Hemlock

—one of the *deadliest* plants in America

By

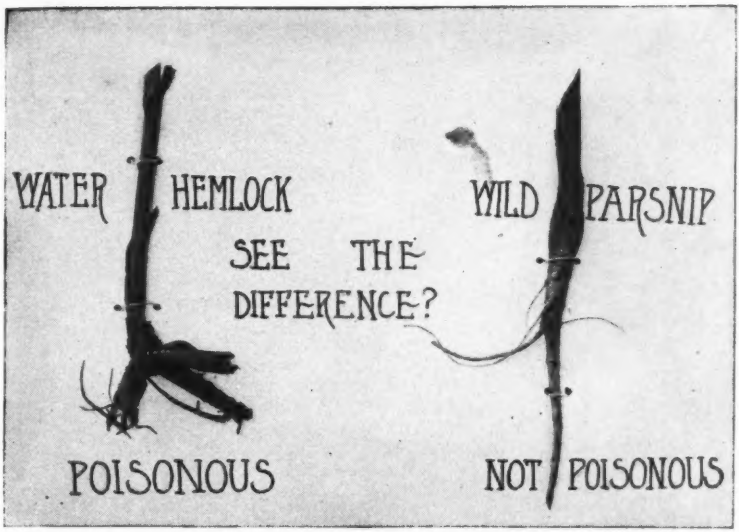
Albert A. Hansen

Purdue Experiment Station, Lafayette, Indiana

ABOUT four o'clock on the afternoon of June 20, 1923, Clyde Shady, of Craigville, Indiana, partook of some sweet tasting, fleshy roots that grew in a wet spot on a railroad right-of-way, on which he was working as a section hand. On account of the fragrant odor he thought they were the roots of sweet anise. A half hour later he died in horrible agony after suffering from violent intermittent convulsions. A piece of the dangerous root that was clutched in the dead man's hand was later definitely identified as water hemlock, one of the deadliest plants in America.

One day last summer Frank Kayser, a farmer of Clinton County, Indiana, noted that his hogs were acting queerly. The animals tore frantically around the hog lot, butting their heads against the fence and exhibiting signs of agonizing pain. A few hours later five of his prize hogs were stiffened in death. An examination of a ditch bank where the hogs had grazed revealed an abundance of water hemlock and several partly-eaten hemlock tubers were found in the vicinity. The trouble occurred during a period of drought, when hogs naturally root for food.

IN all parts of Indiana the deadly water hemlock has been the cause of loss to cattle, sheep, horses and hogs, and Indiana conditions are probably similar in this respect to most sections of America, since water hemlock may be found in practically every state in the Union. It is true that we do not hear as much about plant poisoning east of the Mississippi River as we do in the plains region of the West, but this is due largely to the fact that on account of the vast areas of land devoted to grazing in the West, the losses are more spectacular. In the East losses from water hemlock and other poisonous plants occur singly or in small groups, unaccompanied by a great hue and cry. Nevertheless the losses



¶. The dangerous roots of water hemlock are frequently confused with the harmless root of wild parsnip. ¶. This shows the difference.

occur and the aggregate destruction is heavy.

But why term water hemlock one of the deadliest plants in America? Because the species is common, because the poisonous roots are sweet and aromatic and are eaten by farm animals, because experimental work has demonstrated that a small tuber the size of a walnut is capable of killing a calf within four hours, and because a small quantity of the deadly root may be fatal to man.

We should know more about so dangerous a plant. In the first place, water hemlock grows in wet or moist situations only, such as in marshy places, along ditch banks and on wet roadsides. The plant has much the appearance of wild parsnip or wild carrot (both harmless species), but it can be readily distinguished from either of these two plants by the purple stem and the cluster of fleshy roots which frequently resemble a bunch of small sweet potatoes. Both wild carrot and wild parsnip are simply the wild forms of our common garden plants and possess single roots like ordinary carrot or parsnip. If in doubt, cut the root and if a few tiny drops of a shiny, brilliant yellow liquid are exuded, the plant is water hemlock. Another good characteristic is found in the leaves; the leaf veins terminate at the bases of the notches between the marginal teeth instead of at the tips of the teeth, as other leaf veins do.

The danger of hemlock poisoning is greatest during early spring days, when the roots have been exposed by the thawing of the land, and during times of drought, when hogs root for food. The poison is concentrated in the roots, although field experience indicates that the tops are also dangerous. Feeding experiments with the foliage have failed to produce sickness or death, but the succulent young roots should be regarded with strong suspicion. The plant is dangerous at all seasons of the year, although it is possible that the poison is most virulent during springtime.

¶ *One of the Roycroft Squads planting trees.* ¶ *Over 25,000 white pine seedlings were planted in one day.*

¶ *That which lives after the action has survival value. He who plants a tree has the joy of doing it; it adds to the value of his estate; but the trees will exist long after the man has turned to dust.*

—ELBERT HUBBARD

Planting 25,000 TREES *in one day—*

¶ How a little, nature-loving village made reforestation a big success. ¶ A lesson for many other small towns is here. Read

By
Irving Price

"I TELL you, it's the biggest day East Aurory ever had," said an old villager as the parade went by.

There have been many big days in East Aurora, New York, since 1895, when Elbert Hubbard made his astounding offer of one dollar a load for field stones, and started to build the Roycroft Shops. The farmers thought their village neighbor was surely going crazy, but they rushed their surplus nigger-heads, boulders and plain rocks to market, to get some of the easy money before the bank broke. Unfortunately the supply of sizeable stones gave out before the demand was satisfied, and the top story of the big print shop had to be finished in timber. The field-stone market reverted to a standstill, but ever since plowing has been easier in the fields around East Aurora.

During Hubbard's life there were many happenings in town, and the farmers came to know and respect him as a good citizen as well as a man of genius—and every year since 1915 The Roycrofters and their neighbors had planted a tree on May 7, in memory of their founder's tragic death on the *Lusitania*.

FOR this year, 1923, a new idea was offered by Luther W. Tarbox, at a winter meeting of the Fish and Game Club. The idea spread until it took in every organization in town—why not combine a reforestation program with the Hubbard Memorial? And every individual, from Elbert Hubbard II, president of the village, to the newest tenderfoot Boy Scout, answered, "Yes, let's do it. I'll help."

The Fish and Game Club, assured of support, offered to furnish and plant state-grown white pine seedlings for every farmer who was

interested. The farmers were interested, for every farm has waste corners, bare hillsides or other spots that need trees, after several generations of despoiling our native forests. One city editor commented that this was the first time on record that farmers have ever cooperated with a sportsmen's organization.

To their surprise twenty-five thousand trees were requested, many more than they had bargained for, but they made good. Through efficient organization and hard work every tree was planted, even if some of the local storekeepers and printers had blisters on their hands before they finished.

The big parade was the spectacular feature of the day.

First the band, followed by the members of the Village Board—then five troops of Boy Scouts in uniform—next The Roycrofters in their outdoor regalia of hiking boots, red-topped socks, knickers, flannel shirts and flowing black ties—the Girl Scouts in khaki—farmers in overalls—members of the Fish and Game Club and members of the local Board of Trade, also dressed in overalls and jumpers.

The last three groups looked much alike, and they all carried picks, shovels or spades.

Then came the school trustees and a thousand school children and teachers, each with a bright new American flag. Bringing up the rear were trucks and cars of all descriptions loaded with digging implements.

The line of march led from the center of the village to the disposal plant, where two thousand trees were planted in thirty minutes of organized effort. They worked in teams, some digging the holes, others following with the trees and with water, while the rearguard filled in the earth around the roots. It was real fun for everybody, the most successful kind of community enterprise. The Scouts did their full share to make this record and had been on the job since sunrise, as well as the men.

The same evening the Board of Trade held a dinner at the Roycroft Inn, where it was decided to make Reforestation Day an annual event. At present writing it appears that it will be Reforestation Week hereafter, for over one hundred and fifty thousand trees have been requisitioned for 1924—and more requests coming every day.

The moral of this tale is, "Go thou and do likewise." Every community can handle its own reforestation and have lots of fun in doing it.

¶ *Planting 2,000 trees in 30 minutes on waste land belonging to the village of East Aurora, N. Y.*

Liming the SOIL

By C. A. *Bacon*

THE use of lime as a soil corrective or tonic is becoming generally recognized. Yet farmers often fail to secure the benefits claimed for it. When negative results meet the gaze of a farmer, he is very apt to condemn the lime treatment, charge his experience to profit and loss, and harangue the neighborhood against these "new fangled" ideas.

THE occasion for this article is experience of this very sort. The writer told a farmer who had a sour, sandy soil that lime would correct this condition and enable him to grow clover. The test showed four tons of lime per acre were required to neutralize the sourness.

The farmer plowed early in the Spring, spread the lime and sowed oats and clover expecting to start a vigorous growth of clover. The oats grew, yielding a crop of forty-five bushels per acre; the clover started and reached a growth of three to four inches in height, then wilted and finally died in July.

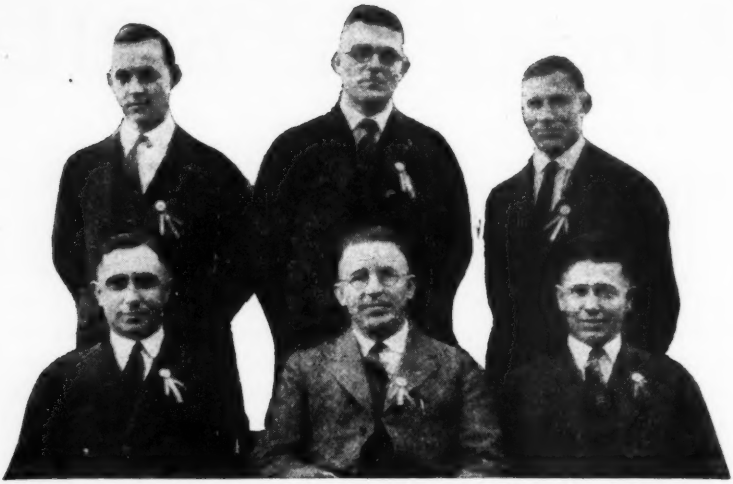
Searching for the cause revealed a soil condition, not unusual, but quite conducive to upsetting any rigid rule for applying lime.

In this instance the weather was very dry, the last half of June and the first half of July. No rainfall. The fact that the oats continued to grow during this time indicates that moisture was coming up from the sub-surface by capillary attraction. The ground showed sufficient moisture to keep the clover growing.

After the clover died, an analysis of the soil, six inches below the surface, showed a sour condition even though it was neutral a few days after the application of lime in the early Spring. Digging three feet into the ground brought to light a sour soil at that depth.

The deduction then becomes very simple. The moisture rising passed through this area carrying the acid up to come in contact with the roots of the clover. While the early Spring trend of moisture was downward, very obviously the lime was doing its work well. In this instance the movement of water into the ground must have been slow for the lime spread on the surface could not have reached a depth sufficient to neutralize the acid moisture before it reached the clover roots.

Assuming this to be the cause, lime at the rate of two tons per acre was spread on the stubble, and the ground plowed nine inches deep in September. The object of this treatment was to turn the lime under to force the upward moving moisture to pass through a limed area before coming in contact with the clover roots. (*turn to page 63*)



Six County Agents who received awards for excellency of their county soil-fertility programs from Committee of the American Society of Agronomy at Chicago. *First row*, left to right, C. F. Class, W. F. Gahm, E. G. Roth; *Second row*, left to right, F. R. Churchill, R. E. Wilson, R. E. Gwin.

6 AWARDS *for* County Soil-fertility Programs

By Herbert C. Brewer

MOST of the readers of BETTER CROPS know something about the county agent's job. From the little I know, I could write a book. Any county agent could doubtless write several volumes without feeling he had really gotten started. If there is any man in the country who is handling a man-sized job, he it is. The county agent earns every nickel he is paid. Measured in terms of his potential power to vastly expand the agricultural resources of the country simply through organizing and directing the farming practices of his county toward better things, he is one of our most important men. Agriculture is the science of the efficient production of food. The county agent is its apostle and missionary.

But one wonders after spending a day or two of vain effort to follow his pace, how the county agent ever gets enough quiet moments to sit by himself, apart from the daily confusion of seemingly petty detail, and figure out just what it's all about. How does he ever get away from the tumult long enough to see the trend, catch a glimpse of the goal, visualize the means by which it may be attained?

And yet during the past year, nearly 50 county agents in almost as many sections of the Northern States have been doing that very thing. Six of them have just been

accorded high honors for—but I am running a little ahead of the story.

In September, 1922, the Soil Improvement Committee of the National Fertilizer Association, after consultation with officials of the American Society of Agronomy and of the colleges and experiment stations of the Northern and Eastern States, announced to the county agents of those States a plan for the development of county soil-fertility programs. Briefly, this plan constituted an appeal for greater attention to the importance of developing in each agricultural county a definite, rational program for the maintenance of the fertility of its cultivated lands.

In order to stimulate interest and induce immediate action, the committee offered to pay the expenses of the eight men, who should submit the best reports of work accomplished, to the annual meetings of the American Society of Agronomy in Chicago, November 12-15.

In order to insure impartial and unbiased judgment upon the reports, a Committee on Awards, composed entirely of members of the American Society of Agronomy, was appointed. It included Prof. F. E. Bear, Ohio State University, Chairman; Prof. S. B. Haskell, Director, Massachusetts Experiment Station and President, The American Society of Agronomy; Prof. M. F. Miller, University of Missouri; and Dr. A. G. McCall, Maryland Experiment Station. These men were charged with the responsibility of making the awards, but to the extension directors of the various states fell the task of first weeding out the reports which they thought undeserving of consideration by the judges.

In order that each county agent might know about what would be expected of him, the judging committee announced the following scorecard, which they used later in making the awards:

Score Card for Judging the Work of County Agents From Reports Submitted by Them on Their County Soil Improvement Programs.

	Points to be Considered	Relative Weights
1	**Analysis of the Problem** Formulation of a statement of the problem as determined by the nature of the soil and the methods of soil management which seem to be feasible in the various systems of farm management which may or should prevail	30
2	**Methods** An outline of the plans by which it is hoped to improve the methods of soil management in the county with specific reference to demonstrations, meetings, press notices, publicity, etc.	20
3	**Results** A statement of the extent to which the analysis of the problem appears to be correct and the methods effective as measured by success in carrying out the program. This should include field data, photos, records of meetings, copies of press articles or of extracts from the specialists' report	30
4	**Applications** An outline of the supplemental plans looking toward the follow-up work with special reference to the means to be employed in measuring the extent to which the program is successful in improving the soil management practices of the county and to the further steps to be taken in insuring continuity of progress	20
	TOTAL	100

On October 25, 1922, the Committee on Award met in Columbus and subsequently announced the names of six men to receive the awards. They were as follows:

Walter F. Gahm, Scioto County, Ohio.

E. G. Roth, Crow Wing County, Minnesota.

R. E. Wilson, Kent County, Delaware.

C. F. Class, Warren County, Ohio.

R. E. Gwin, Cherokee County, Kansas.

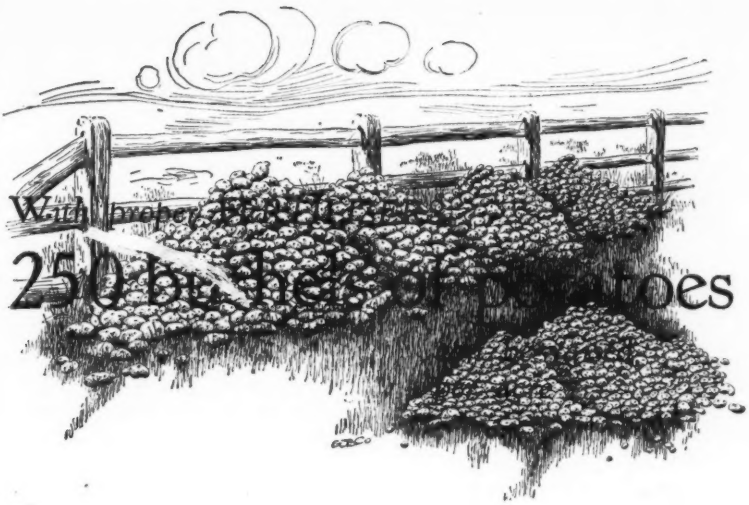
F. R. Churchill, Addison County, Vermont.

Mr. Gahm's program was given the highest ranking and because of its unusual merit, it will be reviewed in some detail in next month's issue. Mr. Gahm was also accorded the unusual distinction of a place upon the Society's program at Chicago, and what he had to say at that time regarding his work was received with marked interest.

There seems to be little doubt but that this first year's work already has been productive of important results. Mr. Wilson, speaking for the successful county agents, at a meeting given in their honor in Chicago, declared, "Even if we had not been given the trip to Chicago, we would have considered our work as having been most worthwhile. We feel that this important phase of our duties is now well organized and will go forward constantly and more rapidly than could have been possible otherwise." That the American Society of Agronomy is gratified by the work which has been done is indicated in the resolution which was passed at its recent meeting, *i. e.*:

RESOLVED, That the thanks of the Society be extended to the Soil Improvement Committee of the National Fertilizer Association for their interest in the soil-fertility program and recommend that the Committee continue its support.

The six soil improvement programs offer a strange, an almost incredible range of conditions and problems. We like to think of the pioneer days, the days of the 1700's and 1800's, as gone—almost forgotten. But we find, for example, in the program for Crow Wing County, Minnesota, that land clearing is an important phase of the development of its agriculture. Apparently, the pioneer days are not all past. Not that there is more agricultural land in this country to be explored and placed under cultivation; our present tillable acreage probably will not increase very much nor very fast. No, our pioneering is of a different, a more important, permanent sort. We are pioneers in fertility. Ours is the task of discovering how to use the same land year after year with increasing or, at least, constant profit. Ours is the duty of growing better crops at lower cost. One thing we know! The land, our great, common resource, will not respond indefinitely to exploitation. Today, in the older cultivated sections of the Eastern States, there is no question, Shall I use fertilizer? It is rather, What fertilizer and how much is best suited to *my* crops on *my* land? It has reached the stage where every farmer has his individual problems—problems that cannot be answered fully by experience, demonstration or experiment anywhere else in the world. It is only a question of years before the same thing will be true wherever crops are produced in this country. Already in Missouri and Iowa, hitherto unsuspected soil plant-food deficiencies are being revealed by the surprising responses which *(turn to page 38)*



THE potato crop is one of the most valuable money crops in the rotation. It is coming to be one of the most important of our field crops, because, if properly grown, it is usually a profitable crop in itself; besides, it is a crop which is improving in its character. Crops of grain and grass grown after potatoes succeed much better than when sown after many other crops.

The reasons usually given for this improving character of the crop are that it is a cultivated crop, and therefore requires constant stirring of the soil, making the plant food in it more available, and because, if it is fertilized properly, the residues of fertilizers which the potatoes have not used are still available for the use of the crop which follows.

It must not be assumed, however, that potatoes can be grown profitably everywhere and by everybody. The average yield of potatoes in our Eastern States is from 70 to 80 bushels per acre—a yield that, on the average, does not pay well. It is only those who get a yield of 150, 200 or 250 bushels per acre that are really making it a paying proposition. There are a small number of growers at the present time getting 150 bushels per acre; there must be, therefore, a large number of growers who obtain less than 70 bushels per acre.

The cause of the difference in yield between 70 bushels or less and 150 or more is due largely to the intelligent use of commercial fertilizers; even our best soils in their natural condition, while they may contain enough total plant food, are not supplied with a sufficiency of the right kind at the right time, and, because yard manures are neither sufficient in quantity nor properly adjusted in respect to plant food to meet the requirements in the best manner, recourse must be had to artificial supplies or fertilizers. That is, while it is possible to grow a big-paying crop of potatoes on our best

soils without heavy manuring, and while it may be possible on our light soils to grow big-paying crops with heavy manuring, neither one of these methods will always result in profit, first, because, if depending entirely upon soil supplies, the crop would have to be an all-season crop requiring a long period of growth and constant cultivation, or it would have to be manured very heavily and thus make the cost so great as to leave but a small, if any, profit.

In the growing of potatoes, therefore, from the fertilizing standpoint, it is important that the crops should be grouped as follows: Early potatoes, main-crop potatoes and late potatoes, each requiring special characteristics of soil and special fertilizers in order that they may return the largest net profit. It does not follow always that the largest crop is most profitable. For example, in the growing of potatoes for the early markets, whether they are grown in South Carolina or on Long Island, the early market potato usually brings a much higher price per bushel or barrel than the main-crop potato. Furthermore, in many sections of the potato-growing states the early market potato requires a much lighter soil, that is, a soil containing more sand—one that will heat up more quickly in spring and thus permit an earlier working and a more rapid growth than is required for the main crop.

The yields of early potatoes are ordinarily not so large as for other kinds, because the varieties that can be grown very early in the season or grown quickly have not the opportunity to make so large a tuber as those that have the entire season at their disposal. Moreover, potatoes grown for the early market must make a large part of their growth before the conditions are really very favorable for rapid soil activities, and therefore must be supplied with fertilizers containing a larger proportion of food already prepared for the plants to absorb them.

In other words, in the growing of potatoes for the early market the soil is regarded more as a suitable place for the plants to grow rather than as a place where they may obtain a large part of the food which they require. Hence, in growing early potatoes, commercial fertilizers are not only a very useful amendment, but they are really absolutely necessary to make big and profitable crops and also to insure quick maturity. Maturity must take place when ordinarily the most rapid growth is being made.

In the case of the main crop, reliance may be placed upon the soils for a considerable supply of the needed plant food, first, because the crop may utilize practically the entire season for growth, therefore being able to absorb from the soil a much larger proportion of food; and, second, as it is not necessary that they should be planted so early in the season, the necessity for so large a proportionate amount of readily

"available," immediately usable food is not so apparent, and thus the cost of the fertilizer may be reduced.

For the late crop the same principles which apply in the main crop apply more specifically, for in the late crop planting is not usually made until the weather is warm and all soil agencies are active, and, because sun, air, water and bacteria are all exercising their maximum effect during the summer season, soil food is made available much more rapidly, and not only a less quantity but a different kind, must be used in order to derive the most profit.

Potatoes belong to that group of plants which are called "potash-loving," that is, requiring proportionately more potash than many other kinds of crops. The form of potash is also important, especially for the main crop, as the muriate has a tendency to encourage the growth of a larger and rougher tuber and one often more watery than if potash in the form of sulphate were used as the source of supply of this element. In the growing of potatoes on light soils the form of potash is not so important, for the chlorine, which is believed to be the cause, is easily washed away from the light soils.

The practical questions are, therefore: What fertilizer shall I use, and how much shall I use per acre? While the analysis of the potato is some guide as to what to use, it must be regarded as a guide, and not as a rule, because, if it were possible for the potato to use just the kinds and amounts of constituents which it takes out, the fertilizer must be distributed everywhere in the soil; the conditions of growth must be absolutely perfect during the entire season, and these conditions cannot be fulfilled.

A crop of potatoes of 200 bushels per acre will contain practically 30 pounds of nitrogen, 12 of phosphoric acid and 60 of potash. If these were rendered in a formula they would have to be stated as follows:

Ammonia.....3.00%
Phosphoric acid.....1.00%
Potash.....5.00%

The main thing that this analysis shows is that the element taken out in smallest quantity is the phosphoric acid, and that in the largest quantity is potash. It would be manifestly foolish to apply a formula of this sort, because it would be absolutely impossible to distribute such a small quantity of phosphoric acid, even if soluble, so completely as to enable the plant roots to reach it and utilize it for the crop. The proportions in which these elements exist do indicate, however, the use of nitrogen and potash in excess of that of phosphoric acid in order to maintain the balance.

As a rule, the brands of fertilizers made by the manufacturers are nearly always richer in phosphoric acid than in any other constituent, and there must be some good reason for this, although (*turn to page 52*)

ROTATION OF MEN

Land becomes tired of raising the same crops year after year. It runs out of phosphorous, potash, or nitrogen—one, or all three. It becomes infertile and finally refuses to function.

We have learned at least two methods of overcoming this tendency of the soil to become indifferently apathetic—we can rotate our crops, thus giving the soil something refreshingly new to think about each season, or we can chemically and physically inject artificial stimulants that brighten the outlook, increase the ambition of the soil and cause it to laugh a harvest as we tickle it with fertilizer.

I wonder if a wise and provident Nature has not arranged her universe on a plan that demands either the *rotation of men*, or an artificial mental Martini of some kind?

We hear much about men leaving the farm. I do not believe that those who forsake agriculture do so because of their inability to make a living. I think they have simply become mentally infertile. They are tired of doing the same things over and over again—they need an injection of mental potash, and Nature rotates them to other fields. They move to the hilarious city where there is something doing every minute.

These country folk who transfer their ambitions to urban life lend a something to the community that was lacking before their arrival. Lincoln came to the political life from the woods, bringing to a cosmopolitan circle the cosmic pollen of a frugal and industrious mentality which etched his name deep in the granite of his times and of all time.

This inter-pollenization—this *rotation of men*—is not something to "view with alarm." I believe it is a wise precaution and provision of an all-encompassing Nature, designed by her to prevent the fields of men's minds from becoming fallow, futile and infertile.

Let the farmer move to the city and the clerk to the ranch—each will bring to his new work a fresh, active mind, unhampered by precedent and tradition—a new pollen that will stimulate both grange and town. Selah!

NO SUBSTITUTE FOR WORK

Not many years ago to say that a man worked for a living was to insult him. The very term "business man" was originally a slur, meaning a "busy-ness man"—one who was so unfortunate in the selection of his ancestors as to have to sweat for his sustenance. Now we know that work is the real salvation of our cosmic ills.

Every invention, every comfort gained, every progressive move is the result of work—90 per cent. perspiration and 10 per cent. inspiration being the set and unchangeable rule for success and progress. There is no substitute for work.

Men like to sit around and plan. They like to smoke good cigars and in the wreaths of their ropes dream great things. They draw up bills and legislation, draft pamphlets and other rubbish in a vain attempt to circumvent Nature—to find the royal road to social ease, when there is no royal road to social ease, except that long, thin road—that arduous lane called "WORK."

Even the preparation of two editorial pages like these you have just been skimming over and trying to read—is work. They were written over four times, and will not be of any real value until they are re-written fourteen times more. You see that I am nothing, if not honest. There is no substitute for work.

All right, Jack, hitch up the plow, I'm ready!

Yours to a cinder,

Jeff McDermid

6 Awards for Soil-fertility Programs

Herbert C. Brewer's story from page 32

crops are making to fertilizing applications. Referring to Crow Wing County again, a county which 20 years ago was practically all in timber, County Agent Roth reports that on the peat land, which comprises a large proportion of its area, potash and phosphate fertilizers are producing splendid crop increases.

Is there, then, a need for soil-fertility plans; a need for organization to insure to our children and to theirs an opportunity to make at least as good a living as we are making; an incentive to begin, sooner or later, a definite, sensible effort which will insure the food supply of future generations?

In the opinion of the Committee on Awards, the soil-improvement program which Walter F. Gahm has developed in Scioto County, Ohio, was the most complete of all that had their consideration. It illustrates something of what can be accomplished by one who is able to diagnose correctly existing conditions, to develop a plan of attack, to organize every resource for carrying out that plan, and to effectively put the whole thing over.

Mr. Gahm was raised on a farm in a neighboring county and therefore was fairly conversant with the needs of Scioto County before he actually undertook to meet them.

Scioto County is located in the south-central part of the State, on the Ohio River. It is hilly country. The soil, excepting the river bottoms, is acid, lacks organic matter and all the plant-food elements, particularly phosphorus. Drainage in general is good. The land responds to good management.

There is a wide diversity in surface features and soil types and naturally there is a corresponding diversity in types of farming. General farming, orcharding, market gardening, and livestock farming were the principal activities.

Little attention has been given to systematic soil improvement. The yields of ordinary farm crops were low. The carrying capacity of pasture land was far from satisfactory. A serious proportion of the cultivated land was in process of severe erosion. Less than 1,000 tons of limestone per year and not over 60 pounds of fertilizer per crop-acre per rotation were being used in the county. Only 2.6 per cent. of the cropped acres were in legumes. Each livestock unit required six acres of pasture land for its maintenance.

The Program

Four major lines of work, therefore, were decided upon as constituting a program of improvements, *i.e.:*

1. The use of more limestone.
2. The application of more fertilizers of the right kind.
3. The introduction of better crop rotations, including larger acreages of legumes.
4. The rejuvenation of permanent pastures.

Better handling of manure and the use of more tile in some soil types also had their place in the program.

The details of Mr. Gahm's program as developed during the past six years in co-operation with the county and township farm bureaus, the extension specialists of Ohio State University, and community leaders will be given in the January BETTER CROPS. *Watch for it!*

Dear Jeff:

I have read the magazine BETTER CROPS very carefully. It shows a lack of knowledge of the true conditions that the farmer works under.

Take the article trying to minimize the importance of wheat, for instance. Of course, I understand that you are not responsible for that article. However, it was your duty to comment on it intelligently and show the fallacy of the article. Wheat, as you know, is a cash crop that enters into world markets, is grown to some extent in every state in the Union, is consumed at a distance from its origin. It, with its by-products, probably fills more cars than any other farm product and on its abundance and profit to the grower depends to a great degree whether he is prosperous or not. Have we so soon forgotten that "Food will win the war?" So many of the other products compared with wheat depend upon the consumption of other products, for instance, hogs eat corn, tankage, mill feeds, etc., cattle corn ensilage, hay, etc., poultry, etc.

Often they are listed separately and it makes an astounding total, but some of the products have been consumed in raising the other. Corn to a large extent is consumed in the county in which it is grown. Something like 87 per cent. is used as feed for live stock and the remainder for human food and industrial purposes. So many people do not know what they are talking about and in doing so seriously injure the cause they wish to help. At the Wheat Council held in Chicago last summer, Gov. Preus, of Minnesota, said we should increase our per capita consumption of wheat to equal Canada's. He said we were only eating a fraction over 51 bushels per head, while Canada was eating over 90. Were that to happen we would all have to be fitted out with a new set of inner tubes. Of course he got the wrong dope, but not a paper that I saw commented on it. It is things like this that hurt the farmer.

Ignorance where we have a right to expect knowledge.

You will not be able to fool many of us who are in a position to know, but many who do not know are often misled. So if you wish to do agriculture a real service, get some one who can comment wisely on the smooth sounding, yet fallacious article, that is taffy to city people and a cause of disgust to those who know.

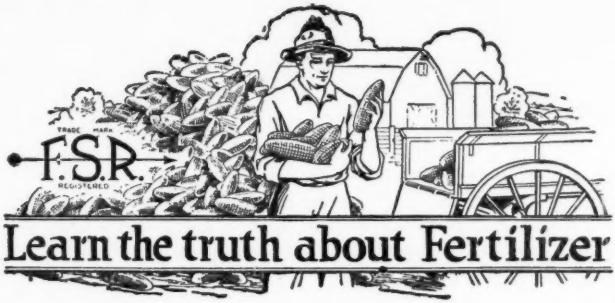
One of the greatest causes of discontent of the farmer here in the Middle West is the continual harping on his conditions by someone who can sling ink with ready and fluent pen, but who knows little and cares a lot less about what he writes.

I beg your pardon for this long letter, but I feel very earnestly about the matter.

Here in the West there is a feeling of hate being fostered by farmers who see railroad men getting high wages and noting the indifference of the industrial east to our plight. We did not win the war alone, neither did we profit from it as has organized labor and capital, who obtained our Liberty Bonds. It is a hate that is being fostered by men who fill the air with blatant promises by articles, written by ignorance, published in ignorance, and consumed by ignorance.

Sincerely,

C. F. WOODARD, Pres. Thayer Co. Farm Bureau, Chester, Nebraska.



Learn the truth about Fertilizer

Commercial fertilizer is not magic. It is no substitute for work, or for farming brains. It will not make a successful farmer out of a shiftless, ignorant failure. Fertilizer varies in quality like corn or tobacco or cotton, and some brands are worth more than others. Good fertilizers, like Royster's reliable old mixtures, are a godsend to good farmers who learn how to best use them to make money.

Nearly forty years experience enters into the making of the Royster mixtures, and hundreds of thousands of the country's best farmers pin their faith to this famous old brand.

For advice about the use of fertilizer, write to Farm Service Department.

F. S. ROYSTER GUANO CO.

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ROYSTER

Field Tested Fertilizers

¶ *Herbert Dallam Martin, of Dallas, Texas, says :*

Cotton Seed Selection Would Increase YIELD

ALTHOUGH the late Dr. Steinmetz produced a fair quality of "synthetic" lightning, and no doubt science will some day find a way to tap the clouds, that time is not yet and the loss from drouth is not a preventable one. E. E. Bartlett, Jr., president of the New York Cotton Exchange, says that the loss from weevil and drouth has been this last season $750,000,000. However, considerably the greater portion of the $750,000,000 loss is due to the weevil, and Government experts, after thirty years of research and experimentation and at great cost, have reached the definite conclusion that calcium arsenate will effectively destroy the boll weevil, so that the appalling loss due to the ravages of that curse may be called preventable.

Mr. Bartlett might have mentioned another loss that probably runs into the hundreds of millions of dollars annually and likewise a preventable one, which is the growers' utter indifference to the matter of seed selection. That is in so far as it applies to the cotton grower, for in the Northern and Western corn States this question of the value of seed selection has been drummed into the ears of the farmers by the business men and educators — men like Perry G. Holden—to such an extent that very material results have been accomplished.

It would be interesting to know just how many hundreds of millions of dollars could be added to the wealth of the South if the cotton crop were grown by the Japanese or the Dutch or the Italians, for we well know that any of these thrifty and intelligent peoples would see to it that none but the most virile seed were planted and reap the attendant harvest.

IN view of the fact that competent authorities agree that the increased yield as a result of proper seed selection is from 25 to 50 per cent., it is unfortunate that the efforts to arouse the cotton growers of the South have been so futile.

There are, of course, some splendid and glaring exceptions, progressive farmers who read the farm papers keep abreast of the times and have the energy to make what-

Co-operation with the Farmer

The American Agricultural Chemical Company is more than a fertilizer manufacturing concern. It is a constructive force in the development of modern agriculture. Our formulas and manufacturing methods have kept pace with the findings of the scientific workers, and the influence of the company in improving crop production has been great.

An important factor in this work is our Agricultural Service Bureau which has co-operated with farmers for years in discovering important facts about soils and crops. This Bureau has been conducted since its inception by Dr. H. J. Wheeler, formerly Director of the Rhode Island State Experiment Station, a man whose authority on soil matters is beyond question, and whose advice is at the disposal of farmers and others interested in the solution of soil and fertilizer problems. Our Agricultural Service Bureau is for your use; consult it freely!

THE AMERICAN AGRICULTURAL CHEMICAL COMPANY

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"DOUBLE A" QUALITY
FERTILIZERS

ever effort is necessary to produce better and cheaper crops. And these are the men who are responsible for having checked the ravages of the weevil through the judicious use of calcium arsenate. But they know that they are in the hopeless minority and most of their neighbors, with obligations due at the bank and needing every dollar they can get, will give no thought to the matter of planting the best seed obtainable, either from their own fields or from some breeder. Many of them even sell to the oil mills the best of their seed and then plant along with the trash what is left in their bins at the end of the season.

It would be interesting to know just how many hundreds of millions of dollars could be added to the wealth of the South if the cotton crop were grown by the Japanese or the Dutch or the Italians, for we well know that any of these thrifty and intelligent peoples would see to it that none but the most virile seed were planted and reap the attendant harvest.

ISN'T it singular, then, that the subject is one that arouses practically no interest in the South? I recall that during the administration of Gov. Colquitt, he issued a proclamation to the people of Texas, naming the first Monday in September as "Seed Selection Day." He probably had in mind that, while the men who worked for a wage in the cities were celebrating Labor Day, the cotton grower could not spend it more profitably than in selecting his best seed from the portion of the crop already ginned or else selecting in the field the hardiest stalks from which he would later cull the best developed bolls and then the most virile seed.

At the time of the Governor's proclamation the people and press were loud in acclaiming the wisdom of the movement and the bankers and merchants hoped it might be the dawn of a brighter day and help the farmer solve some of his financial problems by materially increasing his yield at practically no added expense. It has been only a few years since Gov. Colquitt's administration and do you suppose that any cotton grower in Texas would know what you meant if you mentioned "Seed Selection Day"? Incidentally in this connection to the Dallas Chamber of Commerce is due the credit for having called one of the first meetings to consider the widespread activities of the weevil, which was held here in the City Hall in 1902. Colquitt, then Railroad Commissioner, presiding, and which was followed by a similar meeting in Shreveport the next year. And it was Gov. Colquitt who called the meeting of Governors to consider the same subject, which met in New Orleans in 1911.

ISN'T there, then, an opportunity for Chambers of Commerce, cooperative associations and other organizations which have the facilities for reaching the cotton growers to appeal to their self-interest and urge upon them the value of planting none but the best seed obtainable and to keep eternally at the propaganda until we get from every planted acre in Texas every pound of the best cotton it will produce?

Missiles and Mignonettes

Don't fail to send me BETTER CROPS. I carry all issues to date in my car so, if I have to wait for someone, I have it on hand to read, and often show it to farmers. —*J. B. McCool, County Agent, Clinton, Pa.*

Enjoyed Si Bellew and received some good information on curb markets.—*Mrs. Daisy M. Frazier, Ass't State Club Agent, Stillwater, Oklahoma.*

Is there a farmer in your county

who does not use potash? If so, upon what basis does he decide that it is unnecessary?

Does he believe that there is plenty of potash in his soil? Often it is there, but it is not available; and available potash is the only kind that can feed hungry plants.

Does he decide against sufficient potash because a neighbor got as good results without it? Often soils differ completely on adjoining farms; and the number of years two fields have been cropped may vary half a century.

Does he guide himself entirely by experiments performed at the State College? Often these experiments are performed on soil that is entirely different from the soil in your county; and in addition many experiments are carried through upon a basis that does not intend to prove the value of potash.

Does he know that the only real way to be certain that potash is not a limiting factor in his yield is to *try it one year?*

You advise him to use plenty of potash next season—if he buys mixed fertilizer let him be certain that the potash-unit is high; and you can be certain that your advice will make money for him. *Potash pays!* But be sure that only Genuine German Potash is used, as imported direct from the mines by

POTASH IMPORTING CORPORATION OF AMERICA

81 Fulton Street ***New York***

PICA GENUINE GERMAN POTASH

(NOTE: Name given is of county unless otherwise noted)

Our potato crop is about cleaned up. One hundred cars have been shipped at prices ranging from $26 to $35 per ton. The crop was about 40 per cent. short on account of the unfavorable weather.—*L. Buckman, Washoe, Nevada.*

More bur clover has been sown in Lancaster County (S. C.) this year than ever before. It is estimated that one thousand farmers have seed patches. Five years ago there were only eight or ten patches of bur clover in the county. Several farmers have acreages amounting to more than 100 acres. This crop is being used mostly as a soil improver and for early spring grazing. —*W. F. Howell, Lancaster, S. C.*

Indications are that the Dane County tobacco farmers are adopting the practice of using less barnyard fertilizer on their tobacco lands and increasing the amount of commercial fertilizer used in the row at planting time. The use of commercial fertilizer in the row gives them some barnyard fertilizer for other crops. Results this year with the combination of commercial and barnyard fertilizer were very satisfactory.—*G. M. Householder, Dane, Wisconsin.*

Cotton about all picked. Ginning practically done. Cotton shortest crop in years. Very little fall plowing done yet. Cotton selling on streets today at 33½ cents.—*P. P. Gilchrist, Morgan, Ala.*

The Farm Bureau Cotton Association members of Marshall County are building a concrete cotton warehouse at Albertsville. When finished it will accommodate 4,000 bales. A farmers' curb market was started in Gadsden, November 17, which will offer an opportunity to the farmers of that section to market their surplus products at a satisfactory price and at the same time give the consumer an opportunity to make a saving over the retail prices.—*E. E. Binford, Auburn Postoffice, Alabama.*

Corn crop in southeastern Iowa much below the standard of quality, with an average of about 35 bushels to the acre. Winter wheat doing well. Farmers, on account of prices of corn and hogs, are sending their hogs to market half finished.— *H. O. Weaver, Louisa, Iowa.*

Sugar beets are all out of the ground. High prices of hay and corn are curtailing the feeding of lambs. The number of dairy cattle is rapidly increasing.—*B. O. Chambers, Scotts Bluff, Neb.*

Fall plowing nearly finished. Feed prices high. Milk prices none too good. Plenty of hay and grain for winter but small amount of ensilage. —*E. L. Blordin, Huntingdon, Quebec.*

Mixed Fertilizers			*Fertilizer Materials*
A.	P.A.	P.	Muriate of Potash
7	8	3	Sulphate of Potash
5	8	7	
5	5	5	Acid Phosphate 16% and 18%
4	10	4	Nitrate of Soda
3	10	4	
2	12	2	Sulphate of Ammonia
2	8	10	Dried Ground Blood
2	10	4	
2	8	5	Ground Animal Tankage
0	12	4	Pure Ground Bone

We are prepared to furnish Potash Salts in any quantity

YORK CHEMICAL WORKS
YORK, PA.

NEWTON—*first head of the* U. S. D. A.

(*from page 22*)

the Patent Office, was named by Lincoln as the first Commissioner of Agriculture. It was many years later that the office of Secretary of Agriculture was created and given official recognition in the cabinet of the President.

Under his new appointment Commissioner Newton was given full control of the property of the division in the Patent Office and conducted his work independently of the Department of the Interior. The propagating garden, now located in the heart of Washington, was placed under his care and a tract of 40 acres, constituting at present the grounds of the Department of Agriculture, was assigned to him for an experimental farm.

In 1862 Commissioner Newton appointed William Saunders to be superintendent of the propagating gardens. During the same year C. M. Wetherill was appointed Department chemist and started experiments with new varieties of grapes with which it was thought analyses could be made with profit. His experiments with grapes and also with sorghum sirup were given to the public in the second bulletin issued by the Department. The first bulletin dealt with the objects and aims of the experimental garden.

Commissioner Newton appointed Lewis Bollman as statistician and Townsend Glover as entomologist. He imported several hundred bushels of choice seed wheat, corn, rye, and other cereals, and several thousand dollars' worth of other seeds. These seeds, with others, were distributed to farmers and every effort made to promote the production of more and better crops. In all, Commissioner Newton distributed in 1863, 1,200,000 packages of seed and 25,750 bulbs, cuttings and vines.

At the suggestion of Commissioner Newton that the government establish a practical service for the prediction of storms and floods, the organization of a meteorological division was made in the office of the Chief Signal Officer of the Army, and finally, after many years, in the establishment of the Weather Bureau as it exists today.

The following summer, 1865, the Commissioner finally got possession of the 40-acre farm and started his experimental farm. It was at this point that the second Newton joined the forces of the struggling Department, for a son, Isaac Newton, Jr., was placed in charge of the new farm.

Under the leadership of the second Newton tests were made during the summer of 1865 of new and promising varieties of corn, wheat, rye, oats, barley, rice, sorghum, peas, beans, grasses, clover, cabbage, lettuce, onions, tomatoes, potatoes, and melons. Seventy-seven kinds of potatoes were tried. A large quantity of seed was saved from the farm and distributed during the winter and spring.

Such, in a brief way, was the work and development of the Department of Agriculture under the leadership of that great man, Isaac Newton, followed, as he was, by his son, who remained in active service for years after his father's death, and today by his granddaughter.

Little do we appreciate or realize the struggle made in the early day that agriculture might be justly recognized and advanced.

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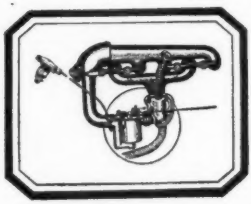

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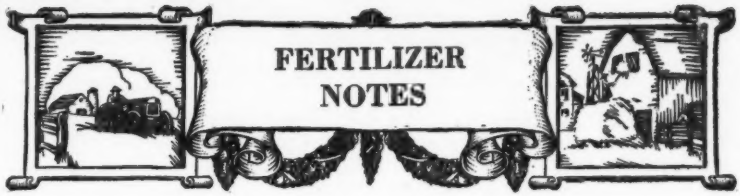


Fertilizer Salesmen Meet College Scientists

During the last month or so, meetings for fertilizer salesmen have been held in four of the eastern States—Virginia, Maryland, New York, and Pennsylvania, primarily to give the officials of the colleges and experiment stations an opportunity to explain their respective soil-fertility programs, particularly as regards the "standard" lists of high-analysis fertilizers.

In general character, the four meetings were much the same—in each, two keynotes were struck; 1, the importance of cooperation between the station workers and fertilizer salesmen, in order that all members of both groups might carry the same fertilizer story to the farmers; and, 2, the necessity, in view of the tendency toward concentrated fertilizers, of more intelligent, helpful service to the purchaser.

The Virginia Meeting

The first of the fall salesmen's meetings was held at Richmond, Virginia, with about 120 men in attendance. Director W. D. Hurd, of the Soil Improvement Committee, after a brief review of the history of the "high-analysis movement," which began in 1918, discussed its purposes and the results which have been achieved thus far. As this information, for the most part, has appeared in previous issues of the *News Bulletin*, it will not be repeated at this time.

Director A. W. Drinkard, Jr., of the Virginia Experiment Station, spoke optimistically of the future of the fertilizer business in the State. "A million tons of fertilizer can be used in Virginia in economic crop production, and this amount will in all probability be used within the next ten years. The prosperity of Virginia depends upon its agriculture, just as the prosperity of the fertilizer industry depends upon its selling those fertilizers which give the best results. Virginia's greatest natural resource is her land. More intensive agriculture is necessary to the proper development of the State, and this will necessitate a much larger use of plant food."

With regard to orchard fertilization, Director Drinkard voiced the sentiment which prevails generally that nitrogen has an important effect upon growth and yield, while phosphoric acid and potash often produce negligible results.

Director T. C. Johnson, of the Virginia Truck Station, Norfolk, related several years' results showing that the best results with fertilizers on truck crops are obtained in connection with lime, legumes, and manure. He emphasized the importance of potash in improving the carrying qualities of truck crops and strawberries and the necessity of using both organic and inorganic ammonia in vegetable fertilizers.

The various ways in which a fertilizer salesman can help himself and the community was the subject of Professor T. B. Hutcheson's talk. "The one thing," he said, "we need in Virginia is a better production per acre, and we can't get very far without fertilizer. That's why we want fertilizer salesmen to get so close to the experiment station that we can consider them as extension agronomists."

Doctor J. B. Weems, State Chemist, and several representatives of the industry also made brief talks. Mr. C. W. Priddy, of Norfolk, emphasized the economies to the manufacturer and the benefits to the farmer as rapidly as the number of

brands and grades are reduced. "Every man," he declared, "should go home and sell the Virginia analyses and sell service, too. It's not salesmanship to sell by cutting prices. A real salesman can sell a thing on its merits; there is no merit in selling at a loss."

Mr. H. Walker Wallace, of Richmond, asserting that salesmen should talk values and service and not alone tonnage, stated that already there is a concentration of demand upon high-analysis fertilizers and that the result of the movement is unmistakably apparent in the tonnage being handled in the Middle West.

The New York Meeting

At the meeting in Ithaca, November 2nd, Doctor T. L. Lyon, head of the Department of Soils, laid the basis for an explanation of the New York soil-fertility program by indicating briefly the quantity and types of experimental work being done in the State.

Following Director Hurd's story of the high-analysis movement, Professor H. O. Buckman discussed fertilizer systems as related to New York soils. There are two general fertilizing systems that have been developed in the State, one for mineral soils containing only about five per cent. organic matter, the other for muck and peat soils containing approximately 70 per cent. of organic matter.

The mineral soils are low in phosphoric acid, and even that which is present is largely unavailable in the ordinary soil. For these conditions, a system has been developed involving the use of acid phosphate and the maintenance of nitrogen by crop residues, farm manure, and a rotation, including a legume. This, the phosphate system, may and often does necessitate the use of complete fertilizers on special crops.

Muck and peat soils are very high in organic matter and nitrogen but relatively low in phosphoric acid and potash. Their greatest need, however, is for potash, and fertilizers recommended for these soils are composed accordingly.

Professor E. L. Worthen gave a clearly defined analysis of the New York fertility program and explained in considerable detail the use of the "New York High Five" fertilizers.

Space does not permit an extended account of each feature of the program, which was long and interesting. In addition to those mentioned, Dean A. R. Mann, of the College of Agriculture, Professor G. F. Warren, Economist, Professor Paul Work, Vegetable Gardening, Professor A. J. Heinicke, Department of Pomology, and Professor A. F. Gustafson addressed the meeting on various phases of crop fertilization and agricultural conditions.

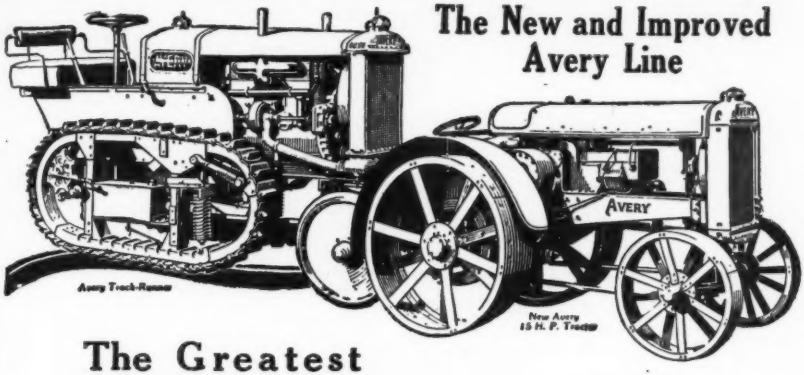
According to Professor Warren, New York farmers are much better off this year than last, and their purchasing power is just about normal as compared to the pre-war basis. The outlook for the long pull ahead is brighter at present than it has been for some time, but still calls for conservatism and safe business practice.

The Pennsylvania Meeting

At the opening of the Pennsylvania meeting at State College, November 8th, Dean R. L. Watts, welcoming the visitors to the College, stated, as his experience as a successful truck grower, that most truck farmers fail to use enough fertilizer to secure maximum profits.

Professor F. D. Gardner followed with a talk on economy in the use of fertilizer. Speaking of the savings which are being effected through the reduction in the number of analyses and the manufacture of high-analysis goods, he said:

"Reduction in number of analyses saves in storage space and facilities, saves in printing of bags and tags, saves in bookkeeping and accounting, saves in loss of time in mixing, and reduces the work of the State control officials. High-grade goods save freight and bags and reduce space for storage and reduce labor in handling on the part of both producer and consumer. Economy on the part of the consumer is quite as important. First, he should purchase the analysis best suited to the soil and crop to be fertilized, be guided by fertilizer tests and experience, use heavy applications for



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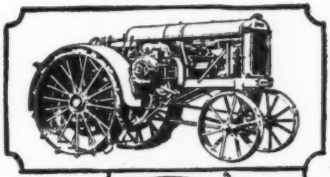
NEW models, many new improvements and refinements, greater power, more economy and lower prices—**the New Improved Avery Line** is really a sensation.

Never in tractor history have so many new improvements and desirable features been developed in one line. Avery machines now give better and more economical service and sell at lower prices.

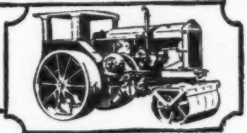
The Avery Line for 1923 includes the Improved Avery Track-Runner that runs on a roller-bearing track; the NEW Avery 15 H. P. enclosed gear, 3-plow wheel tractor, with two bearing belt transmission and two gear contact drawbar transmission; the Improved "Road-Razer" for shaving unpaved roads and streets smooth in summer and removing snow in winter; the Improved Avery Tractors for farming, threshing and road-building in the 20-35, 25-50 and 45-65 H. P. sizes; also grain-saving threshers in all sizes, motor cultivators, tractor plows, tillage tools and other drawbar and belt machinery.

Get the latest prices on Avery Tractors which now give you more horse-power per dollar than ever before offered.

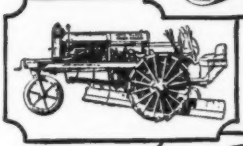
"It pays to Avery-ize"



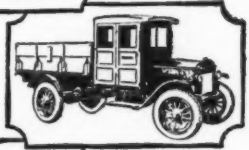
Improved Avery 20-35 H. P. Tractor. Also built in 25-50 and 45-65 H. P. sizes



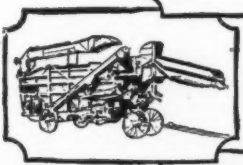
Improved Avery 25-50 H. P. 10-Ton Road-Roller-Tractor. Also built in 45-65 H. P. size



Avery "Road-Razer"



Avery Motor Truck



Avery Grain-Saver Thresher. Built in "Yellow-Baby," "Yellow-Kid" and "Yellow-Fellow" sizes.

Avery Header Thresher. Harvests and threshes the grain in one operation.

Avery Co.

Factory and Main Office Peoria, Ill.

Branch Houses, Distributors and Service Stations covering every State in the Union.

AVERY

Tractors, Trucks, Motor Cultivators — Threshers, Plows, etc.

crops of high money value and light ones for crops of low money value. The range is from 100 to 2,500 pounds per acre." Professor Gardner also called attention to the importance of proper distribution of fertilizer in the soil.

Director Hurd's talk on the high-analysis movement was followed by a discussion by Professor A. L. Patrick, of proper fertilization as determined by soil type.

"Factors that must be considered in determining the kind and amount of fertilizer to use," he stated, "are:

1—Character and composition of the soil.

2—Requirements of the crop.

3—Character of preceding crop.

4—Fertilization of other crops in the rotation.

5—Whether or not manure is used.

6—Value of the crop.

7—Cost of the fertilizer."

Professor W. B. Nissley emphasized anew the fact that market gardeners are being forced by the shortage of manure to turn to cover crops and commercial fertilizers for their humus and plant food. Once having made the change, there are few who are not better satisfied with the new system. He suggested the following adaptation of the "New York High Five" to the common truck crops:

For General Use

4-8-4—General.

6-8-4—Asparagus, celery, lettuce, spinach.

4-12-0—4-12-4—Cabbage, tomatoes, peppers, eggplants.

4-8-6—3-10-6—Root crops.

Special Use

0-10-10—Muck soils.

4-8-10—Muck.

Nitrogen top-dressing.

Phosphorous with manure.

The excessive acidity of a large proportion of Pennsylvania soils was characterized by Professor J. W. White as being sufficiently serious as to prevent commercial fertilizers from exercising their proper functions.

Fertilizer recommendations for potatoes were given by Professor Nickolas Schmitz; for the cereal crops, meadows, and pastures by Professor J. B. R. Dickey, and for fruit by Professor R. D. Anthony.

An interesting sidelight on the progress of the high-analysis movement in the State was given by Doctor Kellogg, State Chemist. Already the number of registered brands has been reduced, the number of different analyses is steadily decreasing, while the average plant-food content of the fertilizers being sold in the State is rising.

---

250 Bushels of Potatoes

(*from page 35*)

they do not pretend that the phosphoric acid is more important always than the other constituents. Experience as well as practice, has taught, too, that profit from the use of a fertilizer is not so much a question of proportions of nitrogen, phosphoric acid and potash as it is a question of the quality and quantity applied. Nevertheless, formulas carrying

No. 1

4.00% ammonia,
6.00% available phosphoric acid,
8.00% potash,

seem to be better adapted for use for the general crop than those containing other proportions, the variations from these formulas depending upon the character of the crops, whether early, medium or late, the kind of soil, whether poor, medium or good. For early potatoes and for light soils a formula richer in nitrogen and phosphoric acid and carrying

No. 2

5.00% ammonia,
8.00% available phosphoric acid,
10.00% potash,

is to be recommended.

Many farmers buy fertilizers on the "hit or miss" plan, without special regard to either the proportion of the constituents or their quality. It is this class of farmers who, while they may not be failures, do not derive as large a profit as if greater care was used in making selection of brands.

IT has been said that the educated man is he who follows the standards of truth and beauty, who employs his learning and observation, his reason, his expression for purpose of ***production,*** that is, to add something of his own to the stock of the world's ideas.

The line of least resistance for the fertilizer manufacturer is to compound various ingredients without respect to their chemical properties and their relation to the soil and crop. The past two decades of increasingly intensive farming have been exemplary of the dangers of soil exhaustion, with the accompanying toxic conditions.

The ingredients making up I. P. THOMAS FERTILIZERS are specially selected to accomplish results, to minimize losses resulting from adverse weather and to furnish plant nutrition by which we mean assimilable, productive plant food.

I. P. THOMAS FERTILIZERS are sold to the farmer that he may ***profit*** from their use.

In Every Fair Bargain, Both Parties Gain.

I. P. THOMAS & SON CO.
Philadelphia, Pa.

Two advertisements — and

THESE two advertisements will appear, during December and January, in a list of farm papers read by over a million farm families in the fertilizer-consuming sections.

What do these messages mean to you? This: we are helping you spread the gospel of increased soil-fertility. We are assisting you in your efforts to get more and better fertilizers used in your county and state. We are doing our part to popularize high-analysis fertilizers, and particularly high-analysis as pertains to potash.

You know that the fertilizers used during the

THE POTASH IMPORTING

Importers of Genuine German Potash of the German Kali Syndicate

The bottom of the barrel—
THERE was an old lady who took only a spoonful or two of flour from a barrel each day and still noticed that the bottom was in sight. She exclaimed "My, this barrel of flour will last forever."
But the bottom finally came!
In your soil there are three plant foods—nitrogen, phosphorous and potash. Every crop you grow takes its toll of each of these three elements.
You replace some of the food by growing legumes, by rotating your crops, and by returning the farm manure.
But do you return all the potash that is removed? If you do not, there will come a day when the bottom of the barrel will be reached.
Manure alone will not do it. You must add potash to your mixed fertilizer, or buy mixed fertilizer that contains plenty of potash.
The use of potash is profitable. Potash pays.
If you buy mixed fertilizer, insist on a formula that is high in potash.
Your dealer has, from the German mixed fertilizers, the choice of three grades. You will want to get it in the grade you require.
Should he be temporarily out of stock, write us and we will tell you where you can get it.
Since May, 1st, 1923, the distribution of German Potash has been greatly increased. Ample stocks are now in this country for immediate delivery. For German Kali Works' potash is mined by syndicate, has been controlled by the
POTASH PAYS
POTASH IMPORTING CORPORATION OF AMERICA
81 FULTON ST. NEW YORK
Genuine German
POTASH

what they mean to you

last four or five years in your community have been deficient in potash—they have not contained enough of this essential plant food. Until this situation is remedied no crop in your section will attain its full potentialities.

Readers of farm papers are going to ask your opinion of potash. We ask you to help us as we are helping you. Tell your farmers to use plenty of potash, and convince them that the best way to add available potash is to use Genuine German Potash, either in the form of potash salts or in the form of mixed fertilizers that contain a high potash-unit.

CORPORATION OF AMERICA
81 Fulton Street
New York City
New York

OLIVER

BETTER PREPARATION—BETTER CROPS

One acre of ground properly prepared for seeding is worth two acres that is deficient in available plant food and that is full of clods and air spaces.

Preparation of the ideal seed bed involves an application of the proper fertilizer, if the soil is deficient in any of the available plant foods, and in properly discing, plowing and firming the soil until it is uniform from surface to subsoil.

Before plowing use the disc on the surface, cutting all trash and mixing it with the surface soil. This will eliminate clods and air pockets. Next plow the land, using a combined rolling coulter and jointer, so that all weed seeds and eggs and larvæ of insects may be laid on the bottom of the furrow. Then, as a final preparation, use disc and pulverizer in pulverizing and firming the soil.

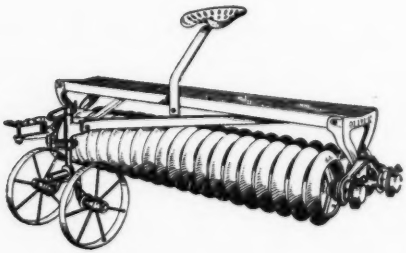
The result will be a seed bed that will be the greatest asset to the farm and to the farmer.

OLIVER MANUFACTURES THE CORRECT IMPLEMENT FOR EACH PHASE OF SEED BED PREPARATION

OLIVER CHILLED PLOW WORKS

Plowmakers for the World

South Bend, Indiana



How 4,200 Walnut Growers Market Cooperatively

(from page 13)

Shipping and Financing

During the shipping season the shipping department of the Association keeps in close communication with the local associations by telegraph and long-distance telephone, so that it knows at all times the stock on hand available for shipment.

Before a shipment can be made it must be thoroughly inspected to insure delivery to the buyer of the particular quality of walnuts specified in the contract with him. This important work is done by the inspection department of the Association, which keeps in touch with the local associations and examines each shipment through one of its inspectors prior to its going forward.

Samples are drawn from each bag to determine the quality and the size and the appearance of the nuts after bleaching. Cracking tests are made of representative samples and if the shipment passes the standard established by the Board of Directors of the Association an inspection certificate is issued to the local association manager, which constitutes his permit to roll the car on the order of the shipping department.

When the local association manager receives the bill of lading and inspector's certificate, he forwards these with a bill for the value of the shipment to the head office in Los Angeles. Upon receipt of the documents, this office immediately invoices the shipment and draws a draft on the buyer, with bill of lading or delivery order attached. One per cent. is allowed if the draft is paid within three days from the date of presentation, or net on arrival and examination of car. The drafts are deposited for collection with the Association's bank in Los Angeles.

5½% of the f. o. b. value of the product. The expenses in detail were classified as follows:

Advertising	2¼%
Cash discount	1 %
Brokerage paid to Association's sales representative	1½%
Interest, rent, salaries, inspection, legal, legislative, growers' services, field work allowances, shrinkage and all other expenses	¾%
Total	5½%

So long and so satisfactory have been the relationships not only between the Walnut Association and its bank but many others of the California organizations, that the banks give the Association credit as cash for the full face value of the draft, in some cases charging a modest rate of interest to the date of collection. After this, the Association immediately sends its check for 90 per cent. of the f. o. b. value of the shipment to the local association. The local association deducts the amount of its operating expenses and distributes the balance of the proceeds to the growers.

A surplus of ten per cent. reserved by the California Walnut Growers' Association on all shipments provides the funds for the operation of the central body. After the close of the first pool, which takes place November 20, the balance is returned to the associations and by them to their growers pro rata.

Approximately 97 per cent. of the entire tonnage of the Association is usually shipped under the first pool. The Association does not in any case borrow money to make advances to the local associations prior to the shipping period. If the grower requires funds for his operations he either arranges to finance himself in the usual way or secures assistance from his local association.

The Association's sales and other expenses for the marketing of the 1922 crop were 5½ per cent. of the

For tobacco
—*Sulphate of Potash*

For tobacco, fruit, succulent vegetables, sugar cane and other crops where flavor is an element, sulphate of potash is usually used instead of muriate.

Its slight additional cost is justified. Tobacco growers, for instance, demand sulphate because its use gives a broader leaf, better flavor and superior burning qualities. The use of sulphate of potash does not create an acid condition of the soil which will necessitate a heavy application of lime to sweeten the seed-bed.

Sulphate is always the safest source of K_2O. See that the mixed fertilizer that comes into your county or state is manufactured from Genuine German Sulphate of Potash and you cannot go wrong. *Potash pays!*

POTASH IMPORTING CORPORATION of AMERICA

81 Fulton Street New York

f. o. b. value of the product. The expenses in detail were classified as follows:

Advertising	2¼%
Cash discount	1 %
Brokerage paid to Association's sales representative	1½%
Interest, rent, salaries, inspection, legal, legislative, growers' services, field work allowances, shrinkage, and all other expenses	¾%
Total	5½%

Approximately 60 per cent. of the Association's advertising appropriation is spent for national magazine advertising, 20 per cent. for poster space and material, and the balance for recipe books, dealers' helps, broadsides, and other methods. All details for advertising campaigns are worked out in advance by the management and the advertising department and are then submitted to the Board of Directors for approval.

Approximately ½c. per pound on the estimated tonnage to be shipped for the season is set aside for the advertising appropriation.

When the Association was organized each of the locals had its own house brand. Almost immediately after the Association was created in 1912, it was found necessary to discontinue them. As a matter of policy it was decided to apply the name "Diamond" brand to cover all walnuts that came above a certain specified quality. After the product is cured, bleached and packed, it is put in branded bags so that all walnuts that are up to the standard quality can be readily identified.

The Association is endeavoring to bring about the invention of a machine that will place the Diamond mark on each individual nut, feeling this will be a big asset and selling point.

1¢ a word —*for you*

BETTER CROPS wants interesting articles about crops, fertilizers, marketing and subjects of interest to County Agents, Experimental Farm Men and other readers.

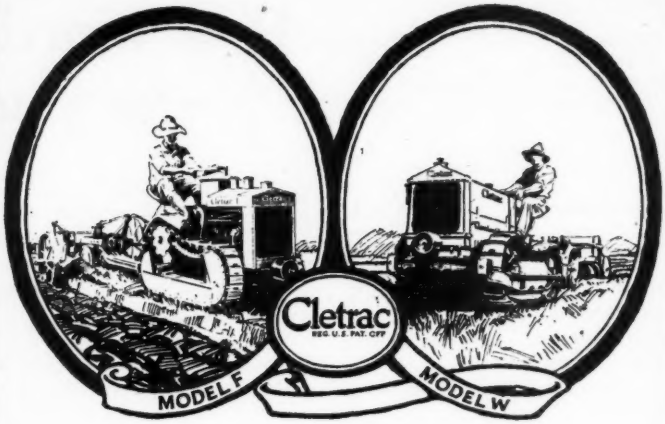
For acceptable stories we will pay at the rate of 1c per word.

BETTER CROPS is edited for the busy man who has not time to read the endless bulletins, farm papers and such material put before him each day. Remember this when you write. Make your story snappy and to the point. Send photographs if you have them. Put in all the local color you can. Do not be afraid to make your article very personal. That is just what we want.

No suggestion is made as to the subject. The editors simply want articles that will be of intense interest to those who constitute its readers—County Agents, Agronomists, Experimental Farm Men, State College Soil Experts, etc.

An easy way to earn money. Two thousand words, $20. But make your story *under* two thousand words, if possible.

BETTER CROPS PUBLISHING CORP.
81 Fulton Street New York



Plowing at the rate of 6 to 10 acres a day, Cletracs make quick work of the biggest fields

Bigger Profits for the Farmer

Not only do Cletracs enable farmers to plow many acres in a day, but they also make every acre turned over produce more, and greater yields mean bigger profits to the farmer.

A Better Seed Bed Insures a Bigger Crop

But Cletracs do more than simply a good job of plowing. They are admirably suited for ground fitting because of their crawler construction. The broad tracks carry Cletracs along over the plowed land without slip at full speed, mellowing the ground into a fine seed bed, but do not pack it down. A well-preserved seed bed is the farmer's best assurance of a bigger yield and a better crop.

A big modern factory with upwards of five acres of floor space under roof and thirty thousand Cletracs in use in the United States, Canada and seventy foreign countries are time-tested evidences of Cletrac's successful operation.

THE CLEVELAND TRACTOR COMPANY

CLEVELAND, OHIO

How One County Agent met a Big Problem

(*from page 14*)

ideal little farm, having sold his large holdings. He was doing some repair work on the new farm, apparently more for his health's sake than for the necessity of the thing. I approached him after spending a half day with him and taking great interest in the little changes that he was making in the arrangements of the new location.

When we came to the crib, which seemed like an accident to him, but was intentional on my part, I began assisting in the plans for that building. It seemed that it would surely need repairing, but when I began getting onto the rat-proof idea he did not want to follow, but I immediately stopped the chance for an argument by proposing to bear half the expense if he would follow the transformation plans. He could not reject that proposal and, on the other hand, I felt sure after he was convinced that he would not require me to live up to my agreement, but I was willing to take the chance in order to get the idea over.

The work was begun and he followed the plan to a letter and informed me of the time when his corn was all in. I took my carbon di-sulphide and a car full of the leaders of the local organizations and drove out to fumigate the corn, which was done and the doors sealed with instructions to leave them sealed until I returned, which he did.

When my party and myself returned I opened the doors knowing my men were expecting a failure, which made me half doubt a possible success myself; in fact, I knew there was a chance of leakage and if such had happened the demonstration would not be a success and my chance for carrying the work over was lost, but that was the first time carbon di-sulphide fumes smelt good to me. They were still there in abundance and my confidence was restored.

The farmer was invited to take charge and look over the casualty list, which he did. Among the dead was a huge rat that had stolen his way in and had died near enough the door to slip out as soon as the opening was large enough. The weevil were all dead, just hundreds of them, daddy longlegs, trickets and every other thing living in the crib.

Not a word was said among the party for some seconds and in the meantime I had stepped back some number of feet and seated myself. About this time the farmer simply remarked to the fellows, "Did you ever see the like?"

This was another one of those personal service propositions that was used as a means for an end. It was one of those things that I could not get over by any sort of an organized move, but would have been purely personal service if by some reason it had failed in its purpose. While I am not an advocate of county agents doing a great deal of personal service, at times it has to be done in order to get a starting place for future demonstrations.

Distributes Close to Ground

Made in One Size—8¼ Feet

The Greater Harvest Getter

FERTILIZER SOWER

WILL successfully distribute Lime and Fertilizer in any quantity desired from 100 to 6,000 lbs. under all circumstances, damp or dry. No Clogging; Light Draft; for two ordinary horses. Other machines of equal capacity are heavy draft for four horses.

The use of fertilizer has become a necessity to modern agriculture. Farmers of the Eastern States have realized for years the profit to be made from the use of fertilizers, and now the Western farmer is rapidly learning to look upon fertilizer as an "investment" rather than an "expense."

The American farmer is learning that by taking everything from his soil and returning nothing, he is headed straight for agricultural bankruptcy, and that every dollar spent on good fertilization is better invested than a dollar in the savings bank.

But fertilizer, to be most efficient, must be mixed with brains. It must be properly applied.

For many fields and many crops, a broadcast distributor offers the best solution of the problem of how to make the application.

There is no distributor on the market that can equal the New Peoria. It took years of actual experimenting in the field to finally produce this high-grade distributor. It bears little resemblance to the makeshift box-wheels-and-axle contrivances commonly found on the market.

We also manufacture Fertilizer Drills in all sizes.

For Catalog and Prices Address

Peoria Drill and Feeder Co.

Peoria, Illinois, U. S. A.

Liming the SOIL

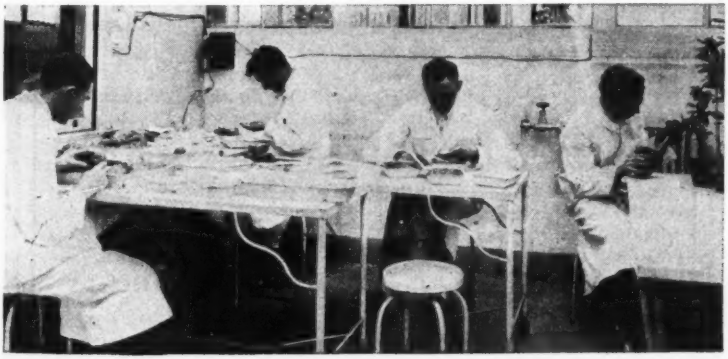
(*from page 29*)

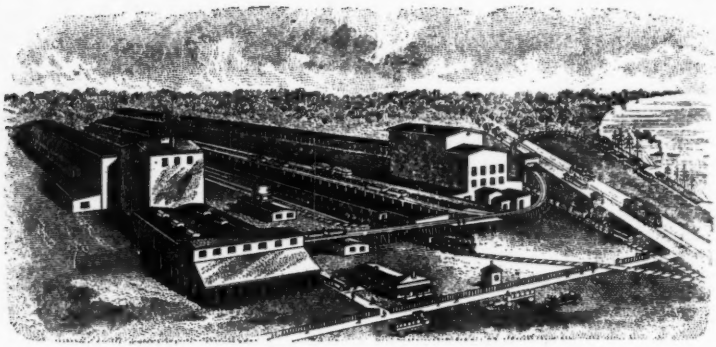
The following Spring, oats and clover were sown as the previous year. The result was a thirty-five bushel crop of oats and a flourishing clover stand, which grew and yielded heavily for several years. Since that time, several troubles of like nature were successfully cured in that way.

This instance proves that a correctly diagnosed soil trouble is just as important as the remedy. When something goes wrong a human being is more inclined to condemn a doctor and his medicine than he is his own lack of inclination to learn the real value of the doctor's service and the worth of his medicine.

A too literal interpretation without an understanding of the trouble often leads one into difficulty. One night a doctor told his patient, afflicted with stomach trouble, that his recovery was far enough advanced for him to carry an oyster on his stomach. The next morning the doctor was astonished to find his patient had a slight fever, and was exceedingly restless. "Did you eat your oyster last night?" he inquired. "Eat nothin'," answered the patient, "you told me to carry it on my stomach and the pesky thing slipped around everywhere."

The fact that lime is universally good for soils does not mean that it can be used indiscriminately, with the expectation of reaping the full benefits. Any soil sour below the depth of the plant roots must have lime between the root system and the sour area, if a crop affected by acidity is to be grown.





THE HOME OF MUTUAL FERTILIZERS

MUTUAL FERTILIZER COMPANY
SAVANNAH GEORGIA
124 BAY ST. E.

WOULD you buy trouble?

Yet, you do when you buy Acid Phosphate that is not properly manufactured.

Too much or too little Sulphuric Acid—just a fraction—added to the rock dust can cause no end of trouble.

MUTUAL ACID PHOSPHATE

is always dry and friable because properly made and cured.

The fine mechanical condition makes all mixtures drillable, no matter how much mineral salts are used.

Write or Wire To-day for Price

MUTUAL FERTILIZER CO.

Manufacturers

SULPHURIC ACID, ACID PHOSPHATE AND COMPLETE FERTILIZER

124 Bay St., E SAVANNAH, GEORGIA

A WOOL MARKET that PAYS

(*from page 7*)

great that a number of people began to inquire into "this blanket game" and the possibility of further shipments, and during 1921 five shipments were made at different times of the year, totaling 8,000 pounds, or enough to make 800 blankets. The greater number of these were sold, the standard price being $11.25 each. It was found that there was not nearly so great a demand for robes as for blankets, and consequently very few robes were manufactured after the early shipments. Nearly all the blankets were sold on orders received directly or indirectly through the county agent's office. When a shipment arrives the farmers are notified to come in and get their blankets, leaving a memorandum as to the number and patterns they wish to sell. Samples of each pattern remain in the office, where they may be seen by anyone interested. In this way orders are received and distributed to those who can fill them. Orders have been filled not only locally but in a number of neighboring cities, and even as far west as Chicago and north to New York and the New England States. Each blanket sells another. Whenever one is shipped into a new section, there have immediately been new orders from the same section to follow.

As stated in the beginning, the blankets sold in 1921 netted the farmers 55 cents per pound for their wool, and placing a value of $11.25 per blanket on each of the eight hundred made up that year, the group of farmers participating in this project realized $2,700 more for their wool in 1921 by this plan than they would have received had it been sold on the local market at the average price during the year. Possibly the entire amount of time spent by the county agent in connection with the wool-blanket work would amount to one entire week, certainly not more. Of course, the opportunity was open to all farmers in the county and was not limited to members of any organization.

In 1922 the current local price of wool was higher than in 1921, the average for the year being about 40 cents per pound. This, of course, did not make the blanket proposition nearly so attractive as it had been when wool was much lower, but the mill voluntarily reduced the cost of manufacture ten per cent. and 1,200 pounds of wool were shipped. Blankets were sold at the same price as before and the wool in the shipment netted the growers 62½ cents per pound, or an increase of 22½ cents above the average local price for the year. Thus this wool shipment brought in $270 more than would otherwise have been realized.

The average price of wool in the county in 1923 has been 50 cents. A shipment of 1,400 pounds was made to the mill and the blankets have sold very readily at $12.00 each, the farmers feeling that this was a very reasonable increase in price, compared with the increase in the local price of wool. At this price the wool has netted the growers 70 $\frac{6}{10}$ cents per pound, or a total of $295 above local price.

While these transactions have not been of any very great magnitude, they do show the practicability of the plan and its possibilities. It should be remembered that no selling campaign has been put on. The blankets have literally sold themselves and there are always a number of orders received after the supply is exhausted. Our success would indicate that if a group of wool growers would undertake a real selling drive for such a product, that a very large number could be handled. A number of inquiries have been received from individuals and organizations in other states and this brief review of the plan is given here with the thought that some other county agents might find it workable. The writer will be glad to make clear any details of the proposition which necessarily have had to be only touched upon here.

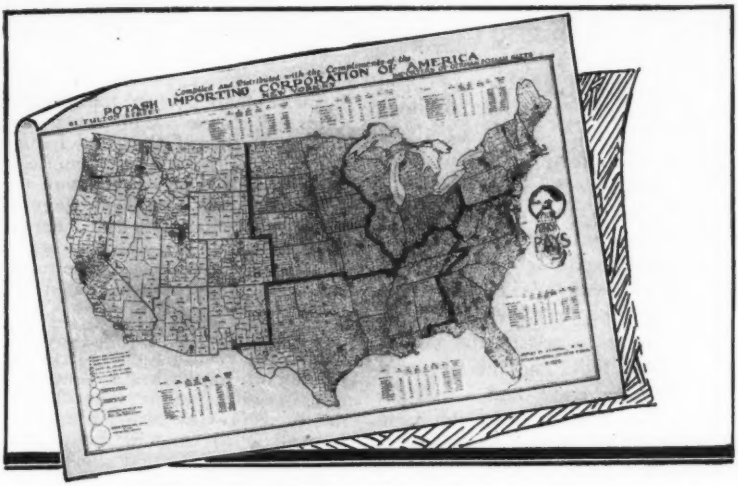
Pigs is pigs—says Ellis Parker Butler—"but where's our grub?"

How to Increase the Efficiency of Southern Farms

(*from page 9*)

the fertilizer is reduced. In fact, in some cases, it will not be necessary to supply for general crops anything much more than materials carrying available phosphoric acid and potash. Where fertilizers are used wisely they will pay well, certainly with such crops as tobacco, cotton, truck, small grains, legumes and corn.

Fifth, the unit production of crops will have to be moderately large per acre in order that the cost per bushel or other unit may be relatively small. To do this, larger yields than are commonly secured will have to be produced which involves the most intelligent use of fertilizers in large amounts coupled with the use of the best cultural methods. It will, too, be necessary to so market the crops produced as to get the greatest returns for them considering the fertility which they carry from the farm. For instance, at the present time, a man who sells crimson clover hay for $20.00 per ton from the farm would be selling actually from the farm in the ton of clover hay, fertility that would cost him in commercial fertilizers more than half of this amount. It is, therefore, highly important that the seller know just what amounts of fertilizing constituents are being taken from the soils of the farm when crops are sold. For it is not only fair but business-like for farmers to take into consideration in selling not only the cost of producing and marketing the crops, but also the value of the fertilizing constituents which their sale carries and which must be purchased to replace them if the producing power of their soils is to be maintained or increased.



Have You Sent for Your Copy?

Free

WE have prepared a map which shows in colors the location of every County, State and Federal Bureau to which the farmer can refer his problems.

Write your name and address at the bottom of this page, tear out the coupon and mail it to us and we will send you a free copy of this large map, carefully wrapped in a mailing tube.

For over twenty years the soil and crop service of the German Kali Works has cooperated with the County Agents of the United States in careful, thorough analytical research. The good work generated during the past two decades is being continued and expanded under the guidance of the Potash Importing Corporation of America, who, since May 1st, has taken over the importation of Genuine German Potash Sales in the United States.

We are always glad to cooperate with County Agents, Agricultural Stations and Colleges in scientific experimentation.

Consult us when you need assistance or guidance on soil or crop problems.

Potash Importing Corporation of America
81 Fulton Street, New York City

Potash Importing Corporation of America
81 Fulton Street, New York City

Gentlemen:

I would be glad to receive, free of charge, a copy of this large map showing the location of every County Agent, Farm Bureau and Experiment Station. I have written my name in the margin below.

How to Increase the VALUE of County Agent Work

(from page 15)

good business and fair dealings must be built.

I have found by being a member of the local Kiwanis Club that I was able to do a great deal in getting the farmer and city man together.

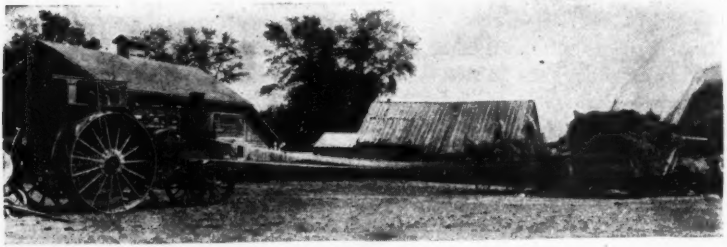
I have continually taken the stand as being the man on the fence whereby I could cite at public meetings the views of the farmer on the one hand and the city man on the other hand, and a solution of the problem which could come about by their becoming better acquainted.

DURING the past year, through the efforts of other committee members and myself of the Kiwanis Club, we have held five what we call Kiwanis-Farmers' Dinners. Our club invites approximately seventy-five farmers at each of these dinners. We hold them in the evening in some rural hall which will accommodate a gathering all told of about one hundred forty men. We have a chicken dinner and after the dinner we call on speakers from both the Kiwanis and farmer group. To end the program the county agent is given the opportunity to cite the views of both city man and country man, where they have each been making their mistake in a social way, not intentionally, but due primarily to the fact that they were not acquainted with each other. The farmer-dinners held by the Kiwanis Club so far have not only increased and strengthened the good fellowship between both country and city business men, but it has put the county agent in a position where he is appreciated a great deal more by the farmers and is also viewed by the city people who are interested in the social and business welfare of both.

The farmers have been told that one of the customs of the Kiwanis Club, both locally and internationally, is to call each man by his first name. Since the farmers were informed of this custom, I find that they call me by my first name rather than by my last. This has been a decided step toward a personal acquaintanceship which results in better service by the county agent to the individual as well as his entire community.

I find at the present time that my strongest communities and the ones in which I can do the most constructive work are those in which our Kiwanis Club has held their dinners during the past year. This all means in my mind that every county agent could make his work of more value to the people of his county by becoming a member of a local civic organization and see to it that the city people get acquainted with the farmers and vice versa and thereby sell something to each other on which there is not a price tag attached, which is good fellowship.

All business dealings must be built upon confidence, respect for each other and good fellowship in a social and business way.



Where Can Genuine German Potash Be Secured?

HERE IS A LIST OF THE DISTRIBUTORS OF GENUINE GERMAN POTASH SALTS:

Grasselli Chemical Co	Birmingham, Ala.
Capital Fertilizer Co.	Montgomery, Ala.
Arkansas Fertilizer Co	Little Rock, Ark.
Meyer, Wilson & Co.	454 California Street, San Francisco, Cal.
Berkshire Fertilizer Co	Bridgeport, Conn.
Olds & Whipple, Inc	Hartford, Conn.
Rogers & Hubbard Co	Middletown, Conn.
Wilson & Toomer Fertilizer Co	Jacksonville, Fla.
Gulf Fertilizer Co	Tampa, Fla.
A. D. Adair & McCarthy Bros	Atlanta, Ga.
Empire State Chemical Co	Athens, Ga.
Southern States Phosphate & Fertilizer Co	Augusta, Ga.
Pelham Phosphate Co.	Pelham, Ga.
Mutual Fertilizer Co	Savannah, Ga.
Read Phosphate Co	Savannah, Ga.
Reliance Fertilizer Co	Savannah, Ga.
Savannah Guano Company	Savannah, Ga.
Southern Fertilizer & Chemical Co	Savannah, Ga.
Georgia Fertilizer & Oil Co	Valdosta, Ga.
Armour Fertilizer Works	209 W. Jackson Blvd., Chicago, Ill.
Darling & Company	Chicago, Ill.
Swift & Co	Union Stock Yards, Chicago, Ill.
Rauh & Sons Fertilizer Co.	Indianapolis, Ind.
Calumet Fertilizer Co	New Albany, Ind.
Federal Chemical Co	Louisville, Ky.
Baugh & Sons Co	Baltimore, Md.
Griffith & Boyd	Baltimore, Md.
Miller Fertilizer Co	Baltimore, Md.
Ober & Sons Co.	Baltimore, Md.
Piedmont Mt. Airy Guano Co	Baltimore, Md.
Tilghman Co., Inc., W. B	Salisbury, Md.
Meridian Fertilizer Factory	Meridian, Miss.
Tupelo Fertilizer Factory	Tupelo, Miss.
The American Agricultural Chemical Co.	2 Rector Street, New York, N. Y.
International Agricultural Corporation	61 Broadway, New York, N. Y.
Caraleigh Phosphate & Fertilizer Co	Raleigh, N. C.
Acme Manufacturing Co	Wilmington, N. C.
Smith Agricultural Chemical Co	Columbus, Ohio
Wuichet Fertilizer Company	Dayton, Ohio
Thomas & Sons Co., I. P	Philadelphia, Pa.
Tunnel & Co., F. W	Philadelphia, Pa.
York Chemical Works	York, Pa.
Etiwan Fertilizer Co	Charleston, S. C.
Maybank Fertilizer Co	Charleston, S. C.
Planters Fertilizer & Phosphate Co	Charleston, S. C.
F. S. Royster Guano Co	Norfolk, Va.
Priddy & Company, Inc.	Norfolk, Va.
Robertson Chemical Corp	Norfolk, Va.
Virginia-Carolina Chemical Co	Richmond, Va.

THE POTASH IMPORTING CORPORATION OF AMERICA

81 Fulton Street **New York**

Did you ever figure what it costs you NOT to use fertilizer ?

¶ The only complete fertilizer plant in the state. It is open for your inspection at all times. We shall welcome the opportunity to show you where

"WHITE DIAMOND" FERTILIZERS

are made, and why they are better.

ARKANSAS FERTILIZER COMPANY

Little Rock, Arkansas

Send for booklet—"*How Arkansas Farmers Have Increased Their Bank Accounts*"

Money Makes Money—*Sometimes*

(*from page 6*)

Thus, through unwise investing, we are drawn into a chain of events which bind us beyond our will—we only wanted a link and behold we are grappled to fate with the chain. Time and events slide on into space and we are powerless to control either our purse, our passions or our purpose.

We want the assurance of a comfortable old age. Who doesn't? And along comes a stock salesman who promises us exactly what we desire—simply sign right here—haven't enormous fortunes been made out of the telegraph, the telephone, the radio, oil, automobiles, chemistry and non-losable hairpins? Certainly! Well, this proposition will make more money than any of those. You can't lose. Sign right here!

Those of us who are tempted to ease our old age in this fashion, should take our surplus, convert it into silver dollars, stand at the river's edge and sail the miserable little cartwheels out over the shining ripples as far as we can throw—at least we will get some exercise out of it, and the beauty of the sparkling dollars sinking for the last time in the golden sunset will be a vision that will recall itself many times in after life.

But put every tenth dollar back in your pocket, if you follow this program—*don't sail that tenth dollar.* Save it. Put it back in your pocket. Put every fourth, fifth, sixth, seventh and eighth dollar back into your pocket if you wish. Then go back home to your banker, or someone in whom you have implicit confidence and take his advice as to a safe bond, a good preferred stock or a first mortgage, or gilt-edge mortgage bond. There is the place to invest.

DOCTORS, dentists, agronomists, county agents and other scientific and professional men have from time unremembered been the victims of unscrupulous, devilish purveyors-of-bunk who foully prey on the scientific, professional mind. These slickers believe with Abou

Ben Adhem, "Lo! Thy name leads all the rest!" when it comes to men who make their money from what they know—they are the easy meat—plenty of money to invest and no business judgment.

Listen, brother—soft music up there, professor—when the slicker comes into your suite, annihilate him, souse him, turn in the fire alarm or shoo him out of your office door. Tell him, while he can yet listen, of the fun you have with your money. Relate to him how you go down to the water's edge each evening at sundown with the day's surplus, and toss the merry cartwheels over the shining water. Convey to him, if you can, how perfectly delightful is the evening sun as it floods its last golden rays on the shining dollars before they hit the surface—and sink from sight for ever and ever, amen!

Rhapsodize a little! Contrast your method for him with the crude vulgar, awkward way in which *he* suggests that you accomplish the same ultimate effect—a dingy check and a "sign here." What inelegance, what a grotesque and uncouth way that is to sink your money when you can have so much fun at the river's edge—and get some much needed exercise in the bargain!

YES, yes, I admit fortunes have been made in inventions, in oil, in licorice-stick factories and Broadway shows. And if you have enough good, safe investments—bonds, preferreds, mortgages, and such—then take a thousand, look at it smilingly and kiss it goodbye. Speculate with it. Toss it into the sea of hope, and if it comes swimming back to you with twins, welcome the twins and send the thousand back to copulation! If it drowns, forget it.

But do not speculate until you have an assured income for your old age, from coupons that will never fail to be acceptable at the little old grilled window. You and I for the safety first idea, Henry, or just when life is getting sweetest, it's us for the poorhouse where the golden-rod is wilted, the chill winds fleck our faces and the honk bird sings softly to his mate in the magenta bush, "Clunk, clack!"

Use high-grade fertilizers for big yields

We recommend:

For cotton: 8-4-4

For truck, with potash from sulphate of potash, especially for potatoes 7-5-5

High-Grade Acid Phosphate and Potash Always in Stock

RELIANCE FERTILIZER COMPANY

Savannah, Georgia

"35 years' experience back of every sack"

Captain Kidder comments on this month's issue

Our old friend Jeff McDermid gets quite blasphemous, doesn't he? How he hates the swindlers that sell fake stocks! He says "take your surplus, convert in into silver dollars and toss 'em into the creek" or words to that effect. But he doesn't instruct us what to do if we have no surplus. Must speak to Jeff about that omission. Perhaps he'll give us the dope next month.

Dean William's article this month is so reasonable that what he says seems overobvious. Yet, I suppose, overlooking the obvious is the one best thing we all do.

That fellow Brand certainly knows his game, doesn't he? No wonder he is around the country lecturing all the time; and no wonder Jeff has such a hard job getting him to come through with his promise to furnish an article each month. He hasn't time to work—too busy talking.

I had a lot of fun reading the article on page 14; didn't you? That one about the county agent that carbon-bisulphided the weevils and rats? These county agents have some unique experiences in their daily work. Jeff ought to get more of them to tell about their adventures.

Irving Price, who wrote the article about the Roycrofters and the way they planted 25,000 trees in one day, is an old friend of mine. He was with Elbert Hubbard when The Fra had but one Philistine, and the Little Journeys were in embryo. His wife is a wonderful painter. You'll hear from her some day, and Irving will be known as "Mrs. Price's husband!"

"Liming the Soil" is a subject of intense interest to everybody, but I rather think that C. A. Bacon's ideas, as expressed in his article on page 29, will not be accepted by many readers of BETTER CROPS. If anybody wants to write to Bacon, send me the letters and I will forward them to him.

That chap Anderson of the Purdue Experiment Station just seems to live on poisonous plants, paradoxical as that may seem. Never knew there were so many obnoxious plants until Anderson's first article appeared in the October issue.

But wait until the returns are in on that story on page 41 by Martin of Dallas! Whew! Won't he catch it! The idea of saying that the Japanese or the Dutch and Italians would add millions of dollars of wealth to the South, because of their superior methods of seed selection. Just you wait, Brother Martin, till we hear from our readers!

Congratulations to County Agent Gahm! He wins the sandpaper bath towel for the best Soil-fertility Program, and with five others received a trip free to Chicago. Many of us would not consider a trip to Chicago much of a prize, but—well, anyway, *part* of the time was undoubtedly spent at the Convention of the Society of Agronomy!

Captain Kidder

WE solicit your inquiries when in the market for Potash Salts in any quantity or for fertilizer material of every description, direct or through our nearest branch offices; these are maintained for your service.

H. J. BAKER & BRO.

81 Fulton Street, New York

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POTASH - THE ESSENTIAL PLANT FOOD

Test on Potatoes: by W. H. Caldwell, East Freetown, N. Y.

Plot No. 1	**Plot No. 2—Complete**	**Plot No. 3—Incomplete**
No Fertilizer	*Fertilizer (With Potash)*	*Fertilizer (Without Potash)*
Yield: 128 Bushels per Acre	Yield: 176 Bushels per Acre	Yield: 152 Bushels per Acre

Increase from $4.50 worth of Genuine German Potash: *24 bushels*

POTASH pays on most crops when properly used, and on potatoes its help in increasing the yield is most satisfying—in fact surprising to the grower who has never used it in satisfactory quantities. A 200-bushel crop of potatoes contains 74 pounds of potash, while it only contains 21 pounds of phosphoric acid and but 46 pounds of nitrogen. It is evident that big yields can only be expected when plenty of potash is used. *It pays!*

POTASH IMPORTING CORPORATION OF AMERICA

81 FULTON STREET
NEW YORK CITY

GERMAN POTASH IS BEST FOR POTATOES